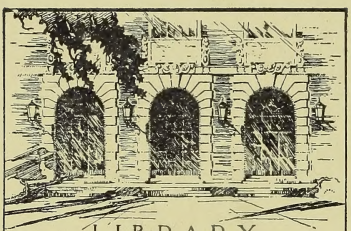

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VOL. III. NO. 1

THE BULLETIN OF THE

ALABAMA POLYTECHNIC INSTITUTE

AUBURN

CATALOGUE
1907-8

ISSUED QUARTERLY
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APRIL, 1908.

26

ENTERED AT POST-OFFICE, AUBURN, ALA., AS SECOND-CLASS MATTER

CALENDAR 1908-09

Session Begins	Wednesday, Sept. 2, 1908
Examination for Admission	Wednesday, Sept. 2, 1908
First Term Begins	Wednesday, Sept. 2, 1908
Mid-Term Examinations	Oct. 26-28, 1908
Literary Society Celebration—Thanksgiving Day	Nov. 26, 1908
First Term Ends	Friday, Dec. 23, 1908
Second Term Begins	Thursday, Jan. 5, 1909
Mid-Term Examinations	Feb. 4-6, 1909
Literary Society Celebration	Monday, Feb. 22, 1909
Senior Class Exercises	Monday, Feb. 22, 1909
Second Term Ends	Saturday, March 20, 1909
Third Term Begins	Sunday, March 21, 1909
Mid-Term Examinations	April 15-17, 1909
Senior Thesis Reported	Saturday, April 24, 1909
Sophomore Class Exercises	Saturday, May 1, 1909
Field Day	Saturday, May 1, 1909
Final Examinations Begin	Tuesday, May 18, 1909
Commencement Sermon	Sunday, May 30, 1909
Annual Meeting of Trustees	Monday, May 31, 1909
Junior Class Celebration, 10 A. M.	Monday, May 31, 1909
Military Exercises, 4 P. M.	Monday, May 31, 1909
Festival of Lights, 8 P. M.	Monday, May 31, 1909
Alumni Day	Tuesday, June 1, 1909
Military Exercises, 5 P. M.	Tuesday, June 1, 1909
Senior Class Celebration, 8 P. M.	Tuesday, June 1, 1909
Commencement Day	Wednesday, June 2, 1909

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ARTS

MAIN BUILDING

CATALOGUE

OF THE

ALABAMA
POLYTECHNIC INSTITUTE

STATE COLLEGE

FOR THE

BENEFIT OF AGRICULTURE AND THE MECHANIC ARTS

AUBURN, ALABAMA

1908

OPELIKA, ALA.
POST PUBLISHING COMPANY
1908

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The Institute is a distinctive school of science and its applications; being also the State College for the benefit of Agriculture and the Mechanic Arts, established by the State in 1872 by endowing it with the land-grant appropriation made by the United States Congress in 1862.

The leading object of the Institute, in conformity with the act of Congress and the acts of the State Legislature, is to teach the principles and applications of science.

In its course of instruction it gives prominence to the sciences and their applications, especially to those that relate to agriculture and the mechanic arts; and at the same time the discipline and liberal education obtained by the study of language and other sciences are not neglected.

All students are required to study the English language. The Latin, French, and German languages are also taught, and opportunity for their study is offered to students in any course.

The special and technical instruction given is thus based on a sound, general education.

In its different courses of education, work of great value to the youth of the State is accomplished by fitting them by a thorough science-discipline, in which manual training in the lower classes is made a prominent feature, for the successful and honorable performance of the responsible duties of life.

While every attention is given to the mental discipline of the students in endeavoring to train them to habits of accurate scientific thought, and thus to qualify them for the duties of life, their moral and Christian training will always constitute the prominent care and thought of the Faculty. The Institute thus endeavors to educate as well as instruct, to form character as well as give information of value.

LABORATORIES AND FACILITIES FOR INSTRUCTION.

The Institute now possesses facilities for giving laboratory instruction in applied science in the following departments:

I. IN AGRICULTURE.

The agricultural experiment station, established in connection with the College, where experiments and scientific investigations relating to agriculture are daily made, affords unusual opportunities to students to become familiar with agriculture, its defects and remedies.

The students of agriculture accompany the professors in the field, where lectures are delivered in the presence of the objects discussed, and during the year exercises in practical agriculture of an educational character are given the students who enter upon this course of study.

The farm contains 304 acres.

II. IN MECHANIC ARTS.

The instruction in shop work is used as an auxiliary in technical education, and as a school of manual training in the arts that constitute the foundation of most industrial pursuits. The work performed by the students is instructive in character, and is intended to give the greatest amount of instruction in principle with the least repetition of operations, and the smallest consumption of time. The work is executed from drawings, and the instructor in charge of the classes makes the lessons before the class, or gives such specific directions as may be necessary to enable the student to make them. This is supplemented by individual instruction.

All students in the sub-freshman and freshman classes take this shop work, three periods a week, each period being two hours long. The sophomore class takes two periods a week. The purpose is not to teach a trade, but to train the eye, the hand, and the mind to more perfect co-operation, a training which will be of value in any pursuit of life. This training involves the principles at the foundation of all trades, and is, therefore, of equal value to a student who wishes afterwards to learn a trade.

Three-phase electric motors are used for driving the different shops, the motors receiving current from the large alternator in the dynamo room.

(*a*) The wood department is located in a room 90x50 feet, and is provided with a surface planer, a variety saw, a swing cut-off saw, a boring machine, and a grindstone. There are, in addition, thirty benches for carpentry work, with the necessary tools.

(*b*) The wood turning and pattern shop is located in a commodious room 40x60 feet, in the second story of the new Power House. It is equipped with twenty-eight wood turning lathes, a grindstone, a band saw, a buzz planer, a pattern maker's lathe, a double circular saw, and a surface planer.

In each of these departments special tools for occasional use are kept in a tool room for the purpose.

In addition to the regular carpentry tools in the benches, each student is supplied with a set of chisels, and plane irons, with a locker to keep them in, and is held responsible for their care and condition.

(*c*) The forge shop is equipped with twenty-four down draft forges, with anvils, hammers, sledges, and other tools necessary for blacksmith work, including a punch and shear for cutting and punching iron, and a blacksmith drill. The blast is supplied by a blower which is also used for supplying the foundry cupola with blast. The smoke from the forges is removed through underground passages by a 60-inch exhaust fan and discharged into the chimney.

(*d*) The foundry is equipped with a 23-inch Colliau cupola, having a melting capacity of 2,000 pounds of iron per hour, the necessary molding tools for bench and floor work, benches, a core oven, ladles, molding flasks, a foundry crane, etc. There is also a brass furnace with crucibles, crucible tongs, and the appliances necessary for making brass castings.

(*e*) The machine-shop is a room 30x100 feet, and is equipped with nine 14-inch, two 16-inch, and one 18-inch engine lathes, one 10-inch speed lathe, a 20-inch drill press, a 10-inch sensitive drill, a 16-inch shaper, two iron planers, one 22-inch by 5-feet and the other 26-inch by 6-feet, a back geared universal milling machine with vertical milling attachment, a water tool grinder, a bench grinder, a universal grinding machine, a universal cutter and reamer grinder, a twist drill grinder, and a power hack saw. Three of the engine lathes have compound rests, three have taper attachments, and one is fitted with a turret and a large number of special tools and fixtures which practically convert it into a manufacturing lathe, and serve to illustrate the methods of manufacture by duplicate parts.

For chipping and filing, eighteen benches are fitted with vises and each student is supplied with hammer, chisels, files, and such other tools as he may need, and a locker in which to keep them. A gasoline engine is installed in one end of the shop, and is used for driving at times when the steam plant is not running.

The tool room is supplied with general machinist tools, such as chucks, drills, reamers, taps, dies, gauges, jigs, and special tools. A convenient room is supplied with lockers for keeping clothes, and basins supplied with hot and cold water for the use of the students. The different shops are equipped with electric lamps, and current is furnished when necessary.

III. IN CIVIL ENGINEERING AND SURVEYING.

This department was founded in 1872. The necessary apparatus for field work, including transits, levels, plane table, models of bridges, etc., is provided for the use of students. Especial emphasis is laid upon field work. The class in surveying is divided into five sections, thus enabling the professor to give individual instruction in the use of instruments.

IV. IN ELECTRICAL ENGINEERING.

In the new engineering building three rooms and an office are used by the department of electrical engineering. One of the rooms is a class room, another is used for the telephone laboratory, and the third is a laboratory for electrical measurements.

The wiring in this building is arranged so that alternating and direct currents of various voltages for power, lighting, and experimental purposes can be delivered to any room.

In connection with the laboratories there is installed a repair and construction shop furnished with a variety of hand tools and with power driven machine tools.

(*a*) The electrical measurement laboratory is furnished with a variety of resistance boxes, bridges, galvanometers, standard cells, condensers, etc., as well as two photometers. In addition to the laboratory instruments proper, just noted, the department is provided with representatives of most of the types of commercial ammeters, voltmeters, and indicating and recording wattmeters, for A. C. and D. C. work. There is also a 30,000 volt transformer for break down tests of insulating materials.

(*b*) The telephone laboratory is provided with a full line of telephonic apparatus, phones, relays, condensers, plugs, jacks, lamp and other signals, etc., representative of the Bell and a number of independent telephone companies.

Single pieces are so mounted that they can be connected up in any desired manner and thus the connections of any particular system can be made up and tested out.

(*c*) The dynamo laboratory occupies another building.

Power for experimental work in the dynamo laboratory is furnished by a sixty horse power, automatic, side crank, Harrisburg engine, belted to a line shaft with clutch pulleys, a 15-horse power, variable speed, Westinghouse Type F. Induction Motor, with controller and special resistance grids, so that the motor may be operated under full load on any controller notch, and a 25 horse power Atlas engine.

The Atlas engine is equipped with a governor which permits the speed to be varied within wide limits without stopping the engine.

This laboratory is equipped with a large number of D. C. and A. C. generators, motors and other appliances especially adapted for experimental work. In addition, the equipment of the power plant is so arranged as to be readily available for purposes of instruction and investigation.

V. IN MECHANICAL ENGINEERING.

A very important adjunct to the text book work in the mechanical engineering course is the laboratory or experimental work that the students do during the senior year.

The work in heat and steam engineering is carried on in the power house, and the following apparatus is available for instruction: A 35 horse power cross compound engine, especially arranged for experimental work; a Wheeler condenser, and a Worthington air pump and circulating pump; a 160 horse power American Ball angle compound engine; a 125 horse power tandem compound Buckeye engine; a 60 horse power Harrisburg simple engine; a 25 horse power Harris-Corliss engine; a 20 horse power Atlas engine; a 200 horse power Stirling boiler; a 100 horse power Heine boiler; a Deane duplex steam pump; a 4 1-2 horse power gasoline engine; a 2 horse power two cycle gasoline engine; a 2 1-2 horse power kerosene engine; an Ericsson hot air engine; a New York air pump; a Westinghouse air pump; an Ingersoll-Sargent air compressor; an electric headlight engine; indicators, calorimeters, thermometers, pyrometers, scales, steam gauges, and apparatus for testing steam gauges.

A room on the first floor of Engineering Hall has been fitted up for a laboratory for the testing of materials. In it are installed a Riehle Brothers' testing machine arranged for making transverse, compression, and tension tests, and micrometer apparatus for measuring the deformation of the specimen under test. There is also provided a cement testing outfit consisting of a testing machine, sieves, briquette moulds, boiler and other apparatus for testing the strength, setting properties, fineness, and specific gravity of cement.

On the third floor of Engineering Hall a laboratory is being fitted up for testing fuels, gases, and lubricants. The present equipment consists of a fuel calorimeter to determine the heating value of fuels, complete apparatus for making the proximate analysis of coal, apparatus for collecting and testing flue and furnace gases, and apparatus for determining the viscosity, the specific gravity, the flash point and other properties of lubricating oils. A small electric motor has been installed to furnish power for grinding samples, furnishing air blast, stirring, and other such work.

VI. MINING ENGINEERING AND MINERALOGY.

The department of mining and geology occupies the west half of the new three-story engineering building. The third floor is divided into two well lighted rooms: (1) for lectures and recitations; (2) for drafting. The lecture room is provided with seats to accommodate sixty-four students. In this room is a screen and an electric stereopticon lantern for illustrating lectures. The drafting room has a capacity for thirty. Here the student receives instruction in mechanical drafting and in the calculation and plotting of field notes.

The second story is occupied by the professor's office and the mineralogical laboratory. The latter, like each of the two rooms on the third floor, occupies a floor space of about 960 square feet. In this laboratory there are accommodations for thirty-six. Each student is supplied with a blow pipe outfit, a drawer, and a locker, and each desk is piped for gas. The laboratory is equipped with a good type collection of minerals and lithological specimens as well as working specimens. There is a collection of fossils and casts illustrating the subject of Historical Geology. A very useful set of about 100 wooden models of crystals has just been imported by the college. The geological department has several specific gravity balances of various kinds, contact and reflecting goniometers, a petrographical microscope, a good collection of slides both for the petrographical microscope, and the stereopticon lantern.

VII. ORE DRESSING.

The ground floor is occupied entirely by the metallurgical laboratory. This laboratory is well equipped with ore dressing plants. The concentrating plant consists of a gyratory crusher, two sets of roll crushers, two bucket elevators, four trommels or revolving screens, two classifiers, four Hartz jigs, and a seven-foot Wilfley concentrating table.

The stamp mill is of the full size Nissen type, circular discharge and interior amalgamating plate. The outside amalgamating plate is of full size, being ten feet long. The stamp mill and concentrating plant are fed from their respective bins by two different types of automatic feed. The ore, before entering the bin, is crushed to proper size by a Blake jaw crusher. The Model Cyanide plant illustrates the leaching department of the cyanide process and the extractor box work. It consists of one solution tank, two sand tanks with false bottoms and filters, one gold tank, and a set of extractor box compartments of the up-flow type.

Besides the equipment already mentioned there is an automatic sampler. The cement floor in this department gives a good surface for illustrating coning and quartering in the process of hand sampling.

A twenty horse power motor is the source of power for this laboratory. Shafting, belting, and gears of various kinds transmit the power to the various machines so that a large variety of mechanism is illustrated.

VIII. IN ARCHITECTURE.

The Department of Architecture is located in three well lighted rooms in the main building of the College. A floor space of 2,250 square feet is occupied by a lecture room, 25x30, a large draughting room 30x35, and a library, office, and special draughting room, 15x30, all connected by doors. These rooms are well furnished with large, substantial drawing tables and extra tables for freehand drawing fixtures and additional equipment; a collection of selected plaster casts of classic sculpture and architectural details, a large number of architects' drawings and signed original plates and several hundred examples of freehand drawings of various sorts; a library of standard works and portfolios of plates illustrating details of decoration and composition; 250 lantern slides and many photographs of notable monuments of architecture; manufacturers' samples and catalogues; and various current journals devoted to architecture and the allied arts.

IX. IN DRAWING.

All students in the lower classes are required to take drawing, a study which tends to discipline the mind, as well as to train the eye and hand to accuracy of observation and execution. Four large well-lighted drawing rooms, which will accommodate (at one period) two hundred and fifty students, are provided with tables, lock boxes, etc. The drawing rooms have been equipped with one hundred and fifty new drawing tables of the most modern pattern.

X. IN PRACTICAL CHEMISTRY.

The chemical laboratory is supplied with modern apparatus, and in its equipment affords excellent facilities for instruction in practical chemistry and for investigation.

The investigations that are undertaken in this laboratory by scientific experts, in connection with the work of the agricultural experiment station, are of especial value to advanced students, and afford them unusual opportunities to learn the methods of scientific research.

The building contains a large general laboratory, that accommodates sixty students, a special laboratory for seniors that will accommodate thirty students, a lecture room with a capacity for one hundred and fifty seats, and nine other rooms, all appropriated to instruction and research in chemistry.

The State chemical laboratory for the official anaylsis of fertilizers is connected with the department.

XI. IN PHYSICS.

The physical laboratory occupies two rooms, one of these being permanently darkened for experimental work in light.

It is equipped with numerous standard instruments of precision, such as verniers, micrometers, cathetometers, a horizontal comparator, a Kater's reversion pendulum, balances, etc., and a quantity of minor apparatus.

Recently there has been added a concave grating spectograph, a large induction coil of 12-inch spark, and other apparatus of value.

XII. IN BOTANY AND BIOLOGY.

The laboratory for plant morphology and histology adjoins the lecture room of the professor, and is well equipped for investigation along these lines. The experimental work in plant physiology and pathology is conducted by the students in the laboratory and adjacent greenhouse, both of which are being rapidly equipped and altered to accommodate this important line of work.

A botanic garden is being developed, and it is the intention to add as rapidly as possible representatives of the native flora of this State, and a good collection of the native medicinal plants. In this manner it is planned to secure from the garden its maximum assistance in the work of instruction. Special work in plant breeding and biometry will also be conducted in this garden.

XIII. IN PHYSIOLOGY AND VETERINARY SCIENCE.

The veterinary department occupies a separate two-story building with nine rooms. It is provided with lecture room, office, working and operating rooms for clinical practice, thoroughly equipped laboratories for work in bacteriology, milk and meat inspection, and with museum containing skeletons of the domestic animals for instruction. Free clinics are given every Saturday for the benefit of the students in veterinary science.

There is a separate dissecting room constructed, with cement floor and north roof light, especially for this department. This laboratory is used by the professor and students each afternoon for three months.

XIV. IN PHARMACY.

The laboratory of this department occupies the first and second floor of the annex to the chemical laboratory, and is provided with a sufficient supply of drugs and apparatus necessary for instruction in pharmaceutical preparations. The equipment of the laboratory includes a Laurent Polariscope; a Pulfrich refractometer; a vacuum distilling and drying apparatus, consisting of 1-2 horse power air pump, vacuum chamber, condenser, and Bruhl receiver for fractional distillation under diminished pressure, a three-horse power electric motor, a complete outfit for organic combustion work, and three chemical balances.

The new Pharmaceutical Laboratory on the basement floor of the Pharmaceutical building, is fitted with steam, and has a full equipment for research work in pharmaceutical chemistry.

The students work in the laboratory with the professor from five to eight hours, six days in the week.

The facilities are increased as means are available.

XV. IN HORTICULTURE.

A plat of twenty acres is devoted to orchards, vegetables, fruits, flowers, and grapes. There is a well appointed greenhouse, fitted with modern apparatus for ventilation, heat, etc. Accurate experiments are conducted in this department in fruit growing and the culture of the various vegetables adapted to this climate. Students are given in this laboratory practical instruction in grafting, budding, spraying, fertilization, gathering and marketing crops. Valuable co-operative work with the United States Agricultural Department has been undertaken in this department.

XVI. IN ENTOMOLOGY.

The laboratory of this department is equipped with a good supply of modern instruments and paraphernalia. It is especially arranged for research work, and yet the beginner in entomology will find here ample means for prosecuting his studies. The work in insect photography and photomicrography, so necessary to a proper carrying on of investigations in entomology, is well provided for. The laboratory work consists of exercises in the anatomy, ecology, and classification of insects and of exercises in photography and the use of the *camera lucida.* Special attention is given to the working out of problems in Economic Entomology. The students in this department are kept in close touch with the investigations being prosecuted by the Bureau of Entomology of the United States Department of Agriculture and with the work of the various State Experiment Stations.

XVII. ANIMAL INDUSTRY.

The Animal Industry farm contains about 260 acres; upon this farm is a dairy barn, which accommodates eighteen cows, and a beef cattle shed. The students visit the barns and sheds with the instructors and are thus afforded an opportunity to study the various breeds of live stock and to do stock judging work. In addition to the pure breeds of cattle, sheep and swine upon the farm, there are always graded and scrub animals, which are used in the experimental work in feeding, breeding, etc. All of this stock is used in instructional work. The sophomore students are given dairy laboratory work in which they learn the use of the Babcock tester and of various types of cream separators; they are also taught the methods of making acidity tests, the use of the lactometer, how to make and judge butter, etc. During the second term of the sophomore year the students are given practice in scoring and judging dairy and beef cattle, sheep, and swine. During the junior year instruction in judging horses and mules is given.

XVIII. MILITARY TACTICS.

Instruction in this department is given in conformity with the act of Congress. Students receive the benefit of regular military drill, and, in addition, the military system is used as a means of enforcing discipline and securing good order, promptness, and regularity in the performance of academic duties.

This department is supplied with cadet rifles and accoutrements for the corps.

COLLEGE BUILDINGS.

The frontispiece is a representation of the main College building. It is 160x71 feet, and contains forty-five rooms. This building is not used for dormitories for students, but is appropriated to purposes of instruction and investigation.

It contains the lecture rooms and offices of the professors, laboratories, library, museum, armory, etc.

LANGDON HALL.

This is a two-story building, 90x50 feet. The second story is the audience hall, used for commencement and other public occasions.

ELECTRICAL AND MECHANICAL LABORATORIES.

The first story of Langdon Hall is appropriated to the laboratory of first year wood work in mechanic arts.

The machine shop, forge shop, foundry, and boilers are installed each in separate buildings. A handsome new building, two sto-

ries in height, pressed brick and stone trimmings, has been recently constructed for occupation by the power plant on the first floor and by the pattern making department on the second floor. The dynamo laboratory occupies a separate building.

ENGINEERING HALL.

The Engineering Hall is a handsome three-story building, with twelve large lecture and laboratory rooms. It is constructed of pressed brick with stone trimmings. It harmonizes well with the group of college buildings.

THE CHEMICAL LABORATORY.

As shown on the opposite page, this is a two-story structure, 40x60 feet, with a rear projection, 35x60 feet, of one story and basement, and contains eight rooms. The exterior is of pressed brick, with cut stone trimmings, and terra cotta ornamentation.

In the basement are ample accommodations for assaying and storage.

The main laboratory will accommodate sixty students and contains improved working tables, with water, gas, and every necessary appliance for chemical work.

The laboratory for advanced work in chemistry will accommodate thirty students, and is equipped in the same manner. Adjoining this are two rooms which are used respectively as a balance room, and a room for work with spectroscope, polariscope, etc.

The second story contains a lecture room with seats and tablets for one hundred and twenty students. Around the lecture room are cases containing crude and manufactured products, illustrating agricultural and mechanical chemistry, prominent subjects taught in the institution.

ANNEX TO CHEMICAL LABORATORY.

This is a three-story brick building, containing rooms for pharmacy and drawing.

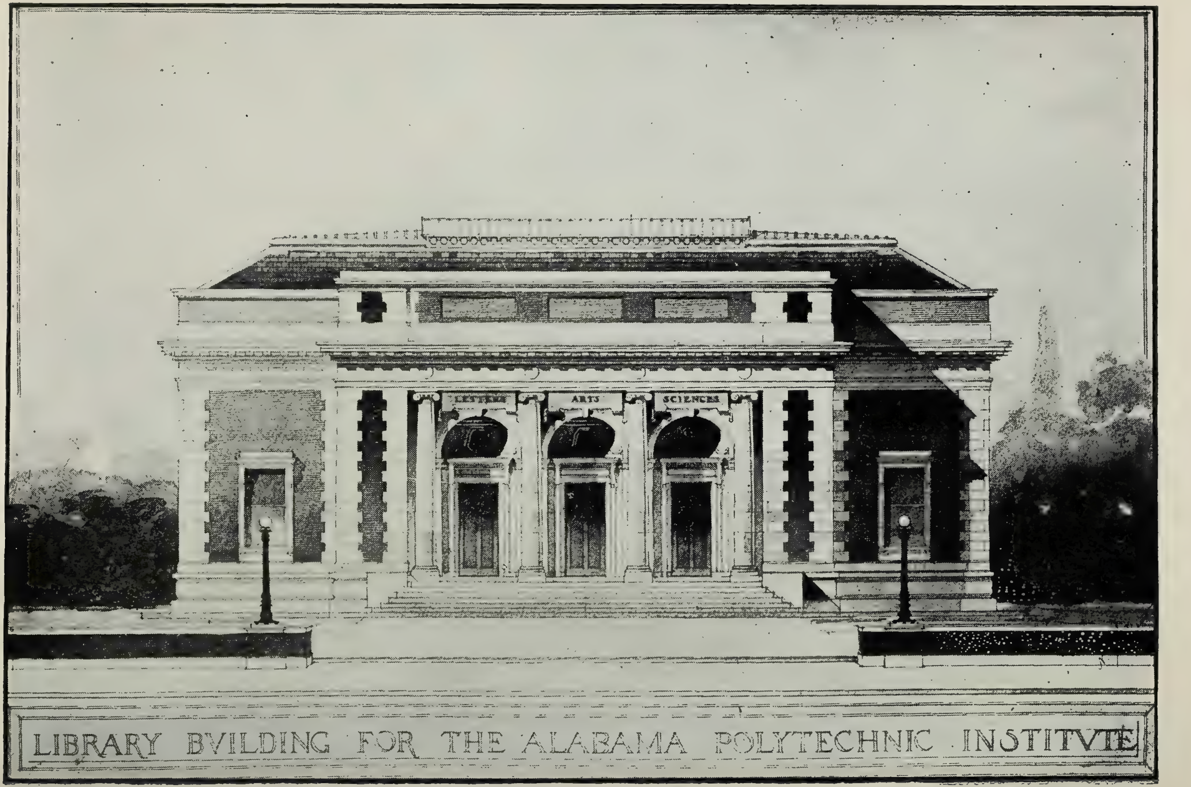
The Chemical Laboratory for the Agricultural Experiment Station occupies a building 60x26 feet, and is appropriated exclusively for chemical investigation and research, and not for instruction.

DINING HALL.

A dining hall constructed of stone and pressed brick, is nearing completion. It is two stories in height, one hundred and forty feet in length, and will accommodate three hundred in the dining hall, and forty in the dormitories above. The style is semi-colonial, and is quite attractive.

LIBRARY BUILDING.

The new library building will be a handsome structure of classical outline, monumental in its general effect. It is presented in an accompanying cut.


LETTERS
ARTS
SCIENCES
LIBRARY BVILDING FOR THE ALABAMA POLYTECHNIC INSTITVTE

LIBRARY

GRADUATES IN 1907

CLASS OF 1907

HONORS.

Members of the senior class who attain distinction with a grade of 95 per cent. are Graduates with Highest Honor. Those who attain a distinction with a grade of 90 per cent. and less than 95, are Graduates with Honor. Those who attain less than 90 per cent. and more than 60 per cent. are Graduates.

DEGREES.

BACHELOR OF SCIENCE.

GRADUATES.

John Davidson Alexander	Marengo
Newton Albert Burgess	Cleburne
Benjamin O'Connor Childs	Georgia
Willie Elvie Chumley	DeKalb
George Washington Coker, Jr.	Elmore
Edward Tarleton Collier	Montgomery
Manly Allen Collins	Hale
Elva Leland Cooper	Lee
Charles Van Wormer Cornell	Lee
Frederick Curtis	Escambia
Marion Brooks Davis	Geneva
Richard Hodges Drake	Lee
Frederick Roy Duncan	Georgia
Dexter Edge	Georgia
Arthur Davis Elsberry	Elmore
James Esdale	Jefferson
Walter Scott Farley	Lee
John Locke Gaston	Wilcox
George Jasper Golden	Georgia
Richard Childs Gowdey	Sumter
William Hardie, Jr.	Jefferson
Ambrose Harwell	Lee
Charles Robert Hixon	Bullock
George Griffin Hughes	Marion
Frank Dansby King	Montgomery

Emma Lena Kirby	DeKalb
William Morris Lacey	Jefferson
Guy Fleming Lipscomb	Marengo
William Gaston Martin	Lee
Roy Palmer Mitchell	Lee
William Ira Moore	Georgia
Eugene Clift Morgan	Jefferson
Thomas Gustave Mundy	Greene
George Houston Palmer	Lee
Bernice Eugene Prather	Lee
Clifford Bartlett Richardson	Colbert
Charles Solomon Ripley	Georgia
Claude Jonathan Rogers	Jefferson
John Pickens Scarbrough	Calhoun
Samuel Robert Shi	Georgia
Lynn Thomas Shook	Jackson
Edwin Hunter Smith	Macon
Melville Sommer	Jefferson
Rieneir Joseph Swart, Jr.	Louisiana
Fletcher Jackson Thagard	Butler
Ernest Wood Thornton	Talladega
James Ernest Threadgill	Marengo
Samuel Augustus Threadgill	Marengo
William Stewart Ticknor	Lee
Edgar Brewster Van Keuren	Jefferson
Adie Goggans Walker	Coosa
William Paul Watkins	South Carolina
Thomas Van Zandt Watson	Georgia
Henry Brant Whitaker	Georgia
Ralph Chester Williams	Russell
Thomas McCottry Williams	Lowndes
Edmund Augustus Wright	Tennessee
Homer Waller Wright	Lee

GRADUATES WITH HONOR.

John Bayard Clarke	Marion
John Cameron Dow	Barbour
Edwin Alexander Harriss	Georgia
Mary Meriwether Harvey	Bibb
Henry Purser Hodges	St. Clair
Charles Mell Hudson	Lee
Norman Burns McLeod	Clarke
Eugene Stewart Pace	Calhoun
William Louis Perdue	Butler
James Douglas Sample	Etowah

Evans Beauchamp Wood--------------------Pike
James Alto York--------------------Dale

POSTGRADUATE DEGREES.

MASTER OF SCIENCE.

Charles Taylor Butler--------------------Madison
Luther Noble Duncan--------------------Lee
Mell Alexander Frazer--------------------Mobile
Cincinnatus Decatur Killebrew--------------------Dale
William Leonard Lett--------------------Lee
William Forney Osburn--------------------Lee
Noah Parker Renfro--------------------Lee
Clifford Anthony Marion Weber--------------------Jefferson

ELECTRICAL ENGINEER.

Casper Carl Certain--------------------Madison
Thomas Byron Richardson--------------------Marshall

MECHANICAL ENGINEER.

William Leroy Mitchell--------------------Lee

PROFESSIONAL DEGREE.

ELECTRICAL ENGINEER.

George Martin Illges--------------------Georgia

DISTINGUISHED STUDENTS

DISTINCTIONS.

Students who receive a grade above 90 per cent. and less than 95 in three studies in the freshman class, in four in the sophomore class, in five in the junior, and in six in the senior, are distinguished for excellence in scholarship, and are awarded certificates of Distinction. Those who receive a grade above 95 per cent. are awarded certificates of Highest Distinction.

FRESHMAN CLASS.

DISTINCTION.

George Eason Blue	Montgomery
Dudley Murfee Clements	Lee
Henry Howard Davis	Geneva
Lewis Manning Dinsmore	Morgan
Jesse Eugene Grady	Covington
Lawrence Kelly	Montgomery
Milton Lothrop, Jr.	Texas
William Stinson Mims	Jefferson
Dennis Markett Moore	Georgia
Clarence Madison Pruet	Clay
Albert Hodges Van Duzer	Georgia
Chandler Cox Yonge	Florida
Albert Leon Young	Lamar

HIGHEST DISTINCTION.

John Judson Keyes	Limestone
William Carter Oliver, Jr.	Texas
Malcolm Alexander Smith, Jr.	Autauga

SOPHOMORE CLASS.

DISTINCTION.

Lawrence Adler	Calhoun
Chester Dewey Allis, Jr.	Jefferson
Thomas Beasley	Lee
Samuel Welch Caldwell	Lee
William Julian Carter	Marengo
Harry Jamison Chatterton	Limestone
Joseph Cohen	Tallapoosa
Benjamin Meyer Goldgar	Georgia
Moe Baruchoff Gottlieb	Macon
James Gray Hanlin	Colbert
Benjamin Edward Harris	Jefferson

Ray Meade	Jefferson
James Weston Moore	Jefferson
Robert Edward Lee Paton	Mississippi
John Taylor Postell	Georgia
Schuyler Harris Richardson	Limestone
Asa Herman Skinner	Marengo
Bernard Augustus Webb	Montgomery
Iralee Whitaker	Lee
Robert Wilson Williamson	Tennessee

HIGHEST DISTINCTION.

Josiah Whittaker Powell	Lowndes
James Gray Stelzenmuller	Baldwin

SPECIAL STUDENTS.

DISTINCTION.

Robert Farnham Croom	Conecuh
Edward William Lind	Jefferson
Thomas William Lloyd	Jefferson

JUNIOR CLASS.

DISTINCTION.

Robert Gayle Adams	Clarke
Henry Winfield Allen	Marengo
Eugene Vernon Camp	Georgia
Charles Clifford Chatley	Jefferson
Littleberry Calhoun Collins	Hale
Samuel Cellner Dreyfus	Montgomery
Bernard Augustus Webb	Montgomery
Newton McCraw Haralson	Dallas
Clyde McNeel Howard	Autauga
Frances Marion Knapp	Lee
Roy Henderson Liddell	Wilcox
Charles Terrell Porter	Talladega
Orman Nimmons Powell	Georgia
Herman Herbert Schomburg	Georgia
James Lister Skinner	Lee
Olin Conway Skinner	Lee
Thomas Washington Smith	Fayette
Jacob Allen Walker	Tallapoosa
William Edgar White	Lee
Ira Edwin Wilks	Crenshaw

HIGHEST DISTINCTION.

John Thomas Moore	Georgia
Wallace Bruce Paterson	Montgomery

CATALOGUE OF STUDENTS

FOR SESSION 1907-1908

Graduate Students.

Elva Leland Cooper	Lee
John Cameron Dow	Barbour
Richard Hodges Drake	Lee
Ward Giltner	Lee
George Jasper Golden	Georgia
Charles Robert Hixon	Bullock
Charles Mell Hudson	Lee
George Griffin Hughes	Marion
William Madison Lewallen	Lee
Guy Fleming Lipscomb	Marengo
William Lewis Perdue	Butler
Joseph Wilder Ridgway	Lee
Roland Eugene Stone	Lee
Ernest Wood Thornton	Talladega
James Ernest Threadgill	Marengo
Adie Goggans Walker	Coosa
Thomas McCottry Williams	Lowndes
Evans Beauchamp Wood	Pike

SENIOR CLASS.

Robert Gayle Adams	Clarke
Henry Winfield Allen	Marengo
Nicholas Lawrence Baker	Lee
Carl Edward Barker	Dallas
Byron Breckinridge Barnes	Greene
Stephen Radford Batson	Jefferson
Clarence Medley Bland	Dallas
Ralph Upshaw Blasingame	Lee
Leon Gilmore Brooks	Escambia
Orrin Brown, Jr.	Lee
Nathan Booker Buchanan	Madison

David King Caldwell	Jackson
Eugene Vernon Camp	Georgia
Charles Leonard Chambers	Jefferson
Charles Clifford Chatley	Jefferson
Augustus Kirby Clements	Lee
Littleberry Calhoun Collins	Hale
George McCown Cook	Lee
Clarence Winston Cooper	Calhoun
Julian Jarnigan Culver	Lee
J. D. Curtis, Jr.	Escambia
Edward Sentle DeShazo	Shelby
Jesse Dixon	Escambia
Samuel Cellner Dreyfus	Montgomery
Thomas Bailey Dryer	Jefferson
George Luther Dunn	Henry
Karl Savary Elebash	Dallas
Macon Carmichael Ellis	Dallas
Samuel Arrington Ellsberry	Montgomery
William Edward Elsberry, Jr.	Elmore
Jacie Lee Esslinger	Madison
Ralph Brunson Everett	Georgia
Charles Edward Fort, Jr.	Dallas
Carl Gilbert Gaum	Jefferson
Carleton Bartlett Gibson, Jr.	Georgia
DeWitt Gibson	Jefferson
Stuart Leland Greene	Mobile
Roe Preston Greer	Perry
Herman Grimes	Wilcox
Finley McCorvey Grissett	Escambia
Newton McCraw Haralson	Dallas
John Ephriam Harrison	Florida
Andrew Johnston Hawkins	Jefferson
Robert Edward Hodnette	Macon
Allen Glover Holder, Jr.	Clarke
Howard Holleman	Georgia
William Robert Holley	Henry
Clyde McNeel Howard	Autauga
Leo A. Kling	Mobile

Frances Marion Knapp	Lee
Roy Henderson Liddell	Wilcox
John Thomas McLure	Calhoun
George Henry Marsh	Pike
Daniel John Meador, Jr.	Marengo
Goldie Emily Miller	Blount
John Thomas Moore, Jr.	Georgia
James Augustus Morgan	Cleburne
William Lee Newberry	Jefferson
Carl Dozier Pace	Calhoun
Marion Curtis Parmer	Lowndes
Edwin Steele Partridge	Mobile
Wallace Bruce Paterson	Montgomery
Walter Werle Peagler	Butler
Charles Terrell Porter	Talladega
Herbert Davis Posey	Jefferson
Orman Nimmons Powell	Georgia
Walker Reynolds	Calhoun
Obie Riddle	Coosa
Albert Price Rogers	Marengo
Herman Herbert Schomburg	Georgia
Francis Minor Shepard	Mobile
James Lister Skinner	Lee
Olin Conway Skinner	Lee
Lester Chauncey Smith	Montgomery
Pickett Chauncey Smith	Montgomery
Thomas Washington Smith	Fayette
James Gardner Somerville	Pickens
Paul Clinton Sorsby	Jefferson
Foster Webb Stanley	Butler
James Thomas Steele	Marengo
Clarence Brittan Stillman	Jefferson
Penrose Vass Stout	Montgomery
Grover Cleveland Walker	Coosa
Jacob Allen Walker	Tallapoosa
Dessie Chlorine Ward	Lee
John James Weatherly	Calhoun

Henry Jones Weiss, Jr.	Jefferson
Oroon Datus Whitaker	Lee
William Edgar White	Lee
Daniel Elmer Wilkinson	Covington
Ira Edwin Wilks	Crenshaw
Carlton Adams Wilmore	Indiana
William Redding Winship	Georgia
Sidney Harvey Winslow	Morgan
Samuel Wolff	Montgomery
Charles Williamson Woodruff	Jefferson

JUNIOR CLASS.

Walter Clarence Abbott	Lee
Lawrence Adler	Calhoun
Chester Dewey Allis, Jr.	Jefferson
Walter Langdon Barker	Montgomery
Russell Newton Bean	Cleburne
Thomas Beasley	Lee
Edward Chambers Betts	Madison
Emmett Eason Binford	Lee
George Shields Bishop	Colbert
Simeon Seviel Black, Jr.	Lee
Austin Francis Jefferson Boyd	Sumter
Richard Alva Burleson	Morgan
Samuel Welch Caldwell	Lee
Lano Cantrell	Marion
Ralph Carlisle	Jefferson
William Julian Carter	Marengo
Harry Jamison Chatterton	Limestone
Richard Bonner Cheatham	Georgia
Walter Stanley Childs	Georgia
Albert Lionel Clothier	Mobile
George Edwin Clower	Lee
John Cook	Walker
George Seymour Cooper	Calhoun
Holland Eugene Cox	Jefferson
Roy R. Cox	Pickens
Harry George Culverhouse	Jefferson

Charles Jefferson Davis, Jr.	Florida
William Solomon Dennis	Pike
Daniel Jackson Duffee	Walker
Joseph DuBrutz Eagar	Tennessee
Robert Brooke Ellyson	Mobile
Hubert Frederick Everett	Georgia
Hattie Delia Finley	Blount
Gordon Flournoy	Georgia
John Trentlen Foy	Barbour
Clarence Edward Francis	Chambers
William Wall Garrett	Elmore
William Walton Garrett	Jefferson
Oakley Mills Geibel	Montgomery
Gilbert Graffenreid Glover	Jefferson
L. Llewellyn Glover	Jefferson
Benjamin Meyer Goldgar	Georgia
Moe Baruchoff Gottlieb	Macon
Robert Irvin Hamilton	Talladega
William D. Hammack	Georgia
James Gray Hanlin	Colbert
Benjamin Edward Harris	Jefferson
George Leach Harris, Jr.	Montgomery
Elmer Arthur Haynie	Lee
Daniel Herren	Elmore
John Belton Hodges	Marion
James Bradley Holman	Wilcox
Lewis Henry Hubbard	Montgomery
Charles Paul Illges	Montgomery
William Oliver Jelks	Georgia
Charley Alfred Jones	Lauderdale
John Luther Kennedy	Lauderdale
Donald Kirk	Mobile
Charles Roman Kuchinski	Missouri
Hugh Lawhon	Dallas
Samuel Gordon Laycock	Louisiana
Edward William Lind	Jefferson
Remer Young MacIntyre	Georgia
Clyde Mann	Marshall

Leon Morgan Martin	Coosa
James Marshall Mayes	Jefferson
Daniel MacDonald	Jefferson
Gordon Oliver McGehee	Montgomery
Horace Lamar McWhorter	DeKalb
Roger Barton McWhorter	Colbert
Ray Meade	Jefferson
Thomas Cole Mitchell	Georgia
Benjamin Homer Moon	Clay
James Weston Moore	Jefferson
Benjamin Cockrill Morgan	Washington
Robert Jeptha Morgan	Cleburne
James Walter Motley	Tallapoosa
Wesley Philips Newton	Jefferson
Herman Clarence Nixon	Calhoun
Louis Ethelbert Otts	Hale
William Henry Pace	Lee
Julius Trimble Pearson	Montgomery
George Washington Penton	Coosa
William Ivy Pittman	Houston
Howard Kennedy Porter	Georgia
John Taylor Postell	Georgia
Josiah Whittaker Powell	Lowndes
Schuyler Harris Richardson	Limestone
Andrew Jackson Roddy	Jefferson
Charles Francis Russell	Talladega
Philander Pearsall Scroggs	Georgia
Leslie Warren Shook	Jackson
*Emmons Blaine Shotts	Marion
Asa Herman Skinner	Marengo
Leonard Clyde Slaton	Jefferson
*Sydney Hugh Smith	Jefferson
Andrew Franklin Spear	Dallas
James Grey Stelzenmuller	Baldwin
Bart Dannelly Stephens	Barbour
Reuben Johnson Stewart	Georgia
George Jefferson Street	Clay

*Deceased.

John Logan Strock	Chilton
Charles BPure Sullivan	Tallapoosa
Laurel Franklin Summers	Dallas
William Swart	Louisiana
George Washington Taylor	Choctaw
Bernard Augustus Webb	Montgomery
Millard Ames Westcott	Lee
Iralee Whitaker	Lee
Samuel Oliver White	Tallapoosa
Robert Wilson Williamson	Tennessee
Ernest Gordon Wilson	Georgia
Walter Woolf Wynne	Marengo
Granville Allen Young	Montgomery

SOPHOMORE CLASS.

Raymond Anderson	Mobile
William James Barnes	Greene
James Jefferson Beaver	Walker
Emma Elbert Bennett	Lee
John Blake	Colbert
George Eason Blue	Montgomery
Douglas Gerald Boozer	Georgia
Ridgeway Smith Boyd	Coffee
Sydney Marsh Bryant	Wilcox
Hugh Buchanan	Georgia
Alto Lee Byrd	Lee
Charles Freeman Carter	Georgia
Eugene LaFayette Cathcart	Wilcox
Dudley Murfee Clements	Lee
Merit DeWit Clements	Limestone
Benjamin Taylor Collier	Morgan
George Benjamin Collier	Pike
Joseph Wiley Craighead	Perry
Edward Jacob Davis	Georgia
Edward Lane Davis	Mobile
Henry Howard Davis	Geneva
Pius Martin Davis	Walker

Charles Alexander Dean	Tallapoosa
Lewis Manning Dinsmore	Morgan
Frazier M. Douglass	Crenshaw
Wiley Antony Downing	Escambia
Giles Hamilton Edwards	Jefferson
Harry Thomas Edwards	Jefferson
Thomas Henry Edwards	Lee
Louis Breitenbach Ehrlich	Georgia
Harry Wright Esslinger	Madison
Whitley Lay Ewing	Etowah
William Thomas Ewing	Covington
Jefferson Cameron Falkner	Montgomery
Homer Quitman Gantt	Covington
William Jackson Garnett	Morgan
James McAdory Gillespy	Jefferson
Schley Gordy	Georgia
Jesse Eugene Grady	Covington
Harold William Graham	Baldwin
William Berry Griffin	Clay
Ernest Starr Hansberger	Jefferson
William Augustus Harman	Georgia
William Reese Harvey	Bibb
James Lane Henderson	Jefferson
William Madison Hobdy	Lee
Joseph Hodge	Talladega
Frank Coleman Hopson	Lee
Talmage Coates Hughes	Etowah
James Parks Hutcheson	Tallapoosa
James Wade Ingram	Calhoun
Robert Bellinger Janney	Walker
Franklin Pollard Jones	Jefferson
Lawrence Kelly	Montgomery
John Judson Keyes	Limestone
Edgar Love Kimbrough	Georgia
Walter Searing Knapp	Lee
Harris Bolton Lett	Lee
John Russell Liddell, Jr.	Wilcox
William Lee Lloyd	Macon

Milton Lothrop	Texas
Robert Elisha McCall	Escambia
Joseph Ray McCleskey	Marshall
Cullen Webster McCoy	Calhoun
William Alonzo McIntosh	Tallapoosa
Clyde Fuller McLendon	Montgomery
Harry Clyde McNamara	Georgia
George Tilghman McWhorter, Jr.	Colbert
Joseph Amyle Marques	Mobile
Benjamin Leopold Merkle	Talladega
Samuel McPherson Mims	Calhoun
William Stinson Mims	Jefferson
Clarence Edward Mohns	Jefferson
Dennis Markett Moore	Georgia
Roy Worsham Moore	Georgia
Corry James Morris	Georgia
Cornelius Van Morris	Colbert
Lemuel Bradford Nicholson	DeKalb
†John Charles Nickerson	Shelby
Arthur Samford Noble, Jr.	Elmore
William Carter Oliver, Jr.	Texas
Frank Ordway	Tennessee
†George Roscoe Ozley	Shelby
George Horatio Packwood	Florida
Oscar Watson Payne	Calhoun
John Haigler Phillips	Elmore
Vance Corelton Porter	Lauderdale
Parker Preston Powell	Choctaw
John Bean Poyner	Dale
Sanford William Pruet, Jr.	Clay
James Freeland Reeves	Barbour
Bryant Richardson	Sumter
Henry Thomas Rutland	Georgia
Jesse Blake Rutland	Georgia
Young Shackelford	Montgomery
George Frank Slaughter	Tallapoosa
James Carlisle Smith	Georgia
Malcolm Alexander Smith, Jr.	Autauga

†Not in full standing.

Charles Lewis Speake	Morgan
John Morris Spearman	Walker
Jacob Daniel Spigener, Jr.	Hale
Edwin Ray Stauffacher	Georgia
James Daniel Stetson	Georgia
Edwin Harris Teague	Montgomery
Ernest Chatterton Thomas	Lee
Albert Hodges Van Duzer	Georgia
James Cransby Waits	Covington
John Edward Walker	Tallapoosa
Lindsay Irwin Wallin	Georgia
Harvey Augustus Waters	Pike
Troy Watts	Montgomery
Benjamin Weil	Jefferson
Fortescue Bryan Whitfield	Marengo
Charles Bowden Wilhoite	Tennessee
John Thomas Williamson	Cherokee
Frank Riley Wise	Dallas
D. Cortez Wood	Jefferson
George Hogan Woodall	Jefferson
Frank Perry Woolf	Baldwin
James Jewell Wooten	Lee
Chandler Cox Yonge	Florida
Albert Leon Young	Lamar

FRESHMAN CLASS.

William Wrenshall Alexander	Missouri
Burton Gray Allen	Marengo
Charles Burton Allen	Marengo
Marion Gourdin Allen	South Carolina
Thomas Alred Anderson, Jr.	Calhoun
William Edward Austin, Jr.	Georgia
Novatus Lee Barker, Jr.	Georgia
Harvey Chester Bates	Bullock
Claude Delmar Bennett	Winston
William Curtis Bethea	Lee
Jeptha Hill Blake	Colbert
William Smith Bonner	Clay

Earle Bowen	Jefferson
Ernest Moore Boyd	Sumter
William Wray Boyd	Montgomery
William Thompson Brown	Jefferson
George Cain	Jefferson
Hancel William Caldwell	Lee
William Wallace Caldwell	Lee
James Taylor Calloway	Montgomery
Thomas Vestal Carter	Marengo
Elwyn Allen Cary	Lee
John James Cater, Jr.	Georgia
Eugene Leon Caton	Covington
Otis Gilmer Clements	Lee
Thomas Lee Cobb	Clarke
William Frederick Cobb	Calhoun
Walter McConnel Collins	Georgia
Albert Hansford Cowart	Pike
John Willoughby Crane	Jefferson
Emmett Crook	Calhoun
Frank Shirley Crosby	Greene
John Eayres Davis	Mobile
†Robert Milton Falkner	Montgomery
†John Poston Figh	Montgomery
Lewis Pritchett Fort	Dallas
Thomas Morris Francis	Chambers
Luther D. Fuller	Montgomery
Thurston Dupuis Futch	Florida
Louis Greene Gibson	Tennessee
†Abraham Washington Gilmer	Choctaw
Charles Russell Green	Madison
Robert Knox Greene	Jefferson
Lewis Woodford Hardage	Morgan
Arthur Zellers Heard	Lee
John Daniel Henderson	Lee
Charles Levi Hollingsworth	Talladega
Joseph Frederick Holloway	Geneva
William Stewart Horton	Greene
Joseph Proctor Huger	Calhoun

Austin Jackson	Florida
John Stanley Jervis	Morgan
Harry McCrorie Johnstone	Jefferson
James Taylor Jones	Montgomery
Macey Frank Jones	Lee
Robert Grady Kilgore	Walker
Irvin Kornman	Georgia
Allen Joseph Krebs, Jr.	Jefferson
Brooks Lawrence, Jr.	Jefferson
†William Edwards Lee	Houston
Henry Dixon Long, Jr.	Montgomery
Grafton Lothrop	Texas
John Robert McCaghren	Jefferson
Earl Hill McCowen	Georgia
Howard Clifford McGregor	Jefferson
John Autry McGuirk, Jr.	Calhoun
Ritchey McGuire Marbury	St. Clair
James Tipton Merrin, Jr.	Tennessee
Clarence Wallace Miller	Texas
Lloyd Berrien Moore	Georgia
Lawrence Stern Morgan	Jefferson
Jemison Mims Moseley	Dallas
Edward Cobb Motley	Lee
Thomas Douglas Murray	South Carolina
Clarence Thomas Nichols	Madison
Jack Lawrence Orr	Jefferson
Edmund Fay Pearce	Autauga
Frank Henry Beaufort Penley	Mobile
Wales McIntosh Perdue	Jefferson
George Raymond Peterson	Chilton
Charles Jefferson Porter	Lee
Alsey Clements Pratt	Bibb
Gordon Wheeler Proctor	Jackson
Joshua Stephen Pruitt	South Carolina
Van F. Pruitt	South Carolina
Arthur Leslie Reynolds	Shelby
Joseph Elmer Rhodes	Jefferson
†George Stanley Richardson	Colbert

Briggs Massingale Rogers	Jefferson
Woodmansee Allen Roush	Georgia
Forgus Holmes Sanders	Pickens
Lewis Arthur Scarbrough	Georgia
John Lloyd Shinn	Talladega
Benjamin Woodruff Simon	Marengo
Morgan Smaw	Hale
Lawson Davenport Stapleton	Georgia
Frederick Stewart	Bibb
Richard Anderson Stratford	Russell
Howell Tatum	Montgomery
Edwin Crawford Thomas	Lee
William Bird Thomas	Talladega
Oliver Cromwell Ulmer, Jr.	Choctaw
Arcaster Lee Waldrop	Walker
Thurman Cleveland Waller	Clarke
Ervin Adolphus Watson	Calhoun
Charles Winn Williams	Calhoun
Stafford Smith Willis	Barbour
†Charles Slaughter Wood	Pike
Robert Edward Woodruff	Lowndes
Benjamin Allen Wooten	Marengo
James Harrison Wright, Jr.,	Calhoun
Thomas Lee Wright	Lee
Thomas Parks Wright	Jefferson
Taylor Wyche	Montgomery
Henry Ashby Wynne	Marengo

SUB-FRESHMAN CLASS.

George Howe Ansley	Georgia
Victor Bethune Atkins, Jr.	Dallas
Hial Newton Bertram	Montgomery
Clifford Smith Bishop	Colbert
Archibald Strickland Boyd	Sumter
Harry Houston Breazeale	Colbert
William Edward Brush, Jr.	Jefferson
Foster Lamar Cherry	Lee
Homer David Cogdell	Bullock

Howard Scott Cosper	Talladega
Thomas Harrison Cunningham	South Carolina
Arthur Lawrence Dumas	Lee
Kennett Marcus Dumas	Wilcox
John Allen Enslen	Elmore
William Vaiden Fendley	Clarke
Hugh Friel	Jefferson
Isidore William Gasser	Etowah
Larkin B. Goodwin	Butler
Custer Greer	Cleburne
John Karr Hamil	Pike
Ottis Bart Hayes	Walker
Eben Henry Hines	Conecuh
Rhoton Parrott Johnson	Georgia
Charles Webster Jordan	Randolph
Samuel Thompson Kirby	Lauderdale
Benjamin Lamb	Greene
William J. Lewis	Marengo
Young Kilpatrick Lewis	Marengo
Ernest Felix Lopez	Mexico
Francisco Lopez	Cuba
Gaines Garfield Lovvorn	Randolph
Nathan Carl Luster	Jefferson
James McDonald, Jr.	Jefferson
Tyson McDonald	Jefferson
George Brainard McElhaney	Lee
William Charles Malone	Talladega
Needham Gordon Marley	Dale
Julian Curtis Meadows	Lee
Carl Edward Melton	Georgia
Lehman Knoor Merkel	Talladega
Joseph August Metzgar	Mobile
John Bush Mills	Florida
Malcolm Mitchell	Lee
Charles Moore	Bibb
Jeffrey Earle Morris	Jefferson
Joel Dyer Murphree	Pike
Hugh Grovenstein Norton	Georgia
William Henry Nunnelly	Tennessee

Simon Wilhelm Pentz	Jefferson
Guy Julius Phelps	Montgomery
William Preston Phillips	Dallas
Chester Orrville Porter	Butler
William Roy Raney	Mobile
Warren Frank Ridley	Georgia
James Henry Rikard	Wilcox
Claudius Greene Rives, Jr.	Lowndes
William Smaw, Jr.	Hale
Harry Lester Smith	Mobile
Roger D. Smith	Jefferson
Harry Ingraham Spotswood	Mobile
Charles Stuart Stirling	Pickens
Samuel John Stirling	Pickens
Ernest Gibson Stringer	Talladega
Samuel Watson Sullivan	Lowndes
Herbert Andrews Taylor	Autauga
Frederick Voorhies	Tennessee
James E. Walker	Tallapoosa
Charles Mattison Watkins	South Carolina
Joseph Ericson Webster	Georgia
Walter John Whare	Jefferson
Charles Porter Wright	Lee
Julius Wilmot Wright, Jr.	Lee

SPECIAL AND IRREGULAR STUDENTS.

William D. Armstrong	Lee
Louis Cecil Boykin	Lee
Knox Harwood Camp	Talladega
Edward Montgomery Craig	Jefferson
Robert Farnham Croom	Conecuh
Ossie McGee Cummings	Hale
Thomas Worth Currie	Jefferson
James Grover Davis	Walker
William Madison Dean	Lee
Thomas Malone DeMoss	Tennessee
George Philip Edwards	Lee
Joseph Littleton Edwards	Lee

William E. Hudmon	Lee
Richard Allen Jemison	Jefferson
Bertram Kaufman	Georgia
S. Wight Kitts	New York
William Henry Lanford	Arkansas
Augustus Green Lazenby	Butler
Thomas Courtenay Locke	Montgomery
Curtis Gogan McCoy	Calhoun
Joel Thaddeus McLemore	Greene
Wilkes Coleman McLemore	Greene
Oscar Claiborne Moorer	Conecuh
Andrew Franklin Morgan	DeKalb
Quinton James Neighbors	Lee
William Thomas Owen, Jr.	Calhoun
Thomas Wilbur Park	Georgia
Osie Clyde Prather	Lee
Edmund Greer Randle	Jefferson
Alexander Mitchell Rodgers	Georgia
John Routledge	Jefferson
Curtis LaFayette Shipp	Randolph
Thomas Julian Skinner	Jefferson
Robert Franklin Smyer	Cherokee
Arthur S. Steiner	Jefferson
Sidney Young Styles	Cullman
Henry Clay Turpin	Hale
Frederick Tusten Van Duzer	Georgia
Robert Young Ware	Macon
James Cleveland Webb	Calhoun

DEPARTMENT OF PHARMACY.

TWO YEAR COURSE.

Roe Talbot Carter	First Year	Pike
Henry Roy Faucett	First Year	Bibb
Travis Lambkin Hagood	First Year	Conecuh
Seymour Hall	First Year	Jefferson
Roland Wilson Herring	First Year	Crenshaw
William Seale Hurst	Second Year	Wilcox
Thaddeus Alonza Ingram	First Year	Pike
James Hugh Kyzar	First Year	Pike
John Ralph Lyon	First Year	Monroe
Harry Burnham McGahey	First Year	Tuscaloosa
John Radley Manley	First Year	Randolph
Erskine Martin	First Year	Madison
Thomas Edwin Middlebrooks	First Year	Barbour
J. Robert Persons	First Year	Montgomery
Rufus Peerson	First Year	Lauderdale
Paul Kurt Sauer	Second Year	Texas
Thomas Benton Sellers	First Year	Montgomery
John Slaughter Slaton	First Year	Madison
William Stephens	First Year	Crenshaw
Olie Alger Strickland	First Year	Lowndes
Robert Alford White	First Year	Covington
Jep Woods	Second Year	Fayette

FOUR YEAR COURSE.

Austin Francis Jefferson Boyd	Junior	Sumter
John Cameron Dow	Postgraduate	Barbour
William Wall Garrett	Junior	Elmore
William Robert Holley	Senior	Henry
George Henry Marsh	Senior	Pike
Leon Morgan Martin	Junior	Coosa
William Lee Newberry	Senior	Jefferson
Walter Werle Peagler	Senior	Butler
George Washington Penton	Junior	Coosa
William Lewis Perdue	Postgraduate	Butler
Albert Price Rogers	Senior	Marengo
George Washington Taylor	Junior	Choctaw
Millard Ames Westcott	Junior	Lee
Samuel Wolff	Senior	Montgomery

DEPARTMENT OF VETERINARY MEDICINE.

William Rufus King Beck	Second Year	Wilcox
G. Moore Hall	First Year	Baldwin
E. Tandy Hallman	First Year	Talladega
Forrest Revell Harsh	First Year	Jefferson
Armstrong Hill	Second Year	Talladega
William Monroe Howell	Second Year	Barbour
Percy Wilbur Hudson	Second Year	Lee
Isham Smith Ingram	Second Year	Lee
William Lemuel Ingram	First Year	Lee
Walter Hubbard Lee	First Year	Pike
Paul Thompson Malone	First Year	Lauderdale
Charles Calloway Middleton	First Year	Lowndes
George Bascom Sparkman	Second Year	Florida
John Bowie Steadham	First Year	Lee
Robert James Strickland	First Year	Lowndes
Percy Hairston Sumner	First Year	Greene
James Ernest Threadgill	Second Year	Marengo
Leo Malone Warten	First Year	Limestone
Frank Perry Woolf	First Year	Baldwin

SUMMARY.

Graduate Students	18
Senior Class	96
Junior Class	114
Sophomore Class	122
Freshman Class	115
Special and Irregular Students	40
Sub-Freshman Class	72
Veterinary Medicine	19
Pharmacy	36
	632
Deduct for names counted twice	16
Total	616

NUMBER OF STUDENTS IN EACH SUBJECT OF STUDY.

English	520
History	340
French	45
German	58
Latin	123
Mental Science	12
Political Economy	80
Mathematics	490
Chemistry	240
Chemical Laboratory	206
Agriculture	141
Animal Industry	152
Physics	449
Botany	82
Horticulture	20
Geology	69
Civil Engineering	54
Structural Design	42
Electrical Engineering	100
Mechanical Engineering	88
Mining Engineering	20
Architecture	9
Machine Design	85
Drawing	324
Descriptive Geometry	105
Mechanic Arts	365
Mineralogy	33
Physiology	62
Veterinary Science	60
Pharmacy	35
Military Department	559

RESIDENCE BY STATES.

Alabama	519
Georgia	60
Tennessee	9
Florida	8
South Carolina	6
Texas	5
Missouri	2
Louisiana	2
Arkansas	1
Indiana	1
New York	1
Mexico	1
Cuba	1
Total	616

MILITARY ORGANIZATION.

FOR SESSION 1907-1908

President,

CHARLES COLEMAN THACH.

Commandant,

COL. BENJAMIN S. PATRICK.

Surgeon,

J. H. DRAKE.

Battalion Staff.

Cadet Capt. R. H. Liddell, Adjutant.
Cadet Capt. J. T. Moore, Quartermaster.
Cadet Lieut. S. H. Winslow, Assistant Quartermaster.
Cadet Sergeant S. H. Richardson, Sergeant Major.
Cadet Sergeant J. G. Stelzenmuller, Quartermaster Sergeant.

Cadet Captains,

1. H. W. Allen,
2. C. E. Fort,
3. J. L. Skinner,
4. C. M. Howard,
5. S. A. Ellsberry.

Cadet First Lieutenants,

1. P. C. Smith,
2. C. L. Chambers,
3. R. G. Adams,
4. F. W. Stanley,
5. H. H. Schomburg,
6. O. N. Powell,
7. C. W. Woodruff,
8. O. C. Skinner,
9. R. E. Hodnette,
10. L. C. Collins.

Cadet Second Lieutenants,

1. J. A. Morgan,
2. W. E. Elsberry,
3. D. J. Meador,
4. E. S. DeShazo,
5. W. L. Newberry,
6. W. Reynolds,
7. T. W. Smith.

Cadet First Sergeants,

1. J. W. Powell,
2. A. J. Roddy,
3. R. A. Burleson,
4. B. E. Harris,
5. J. T. Pearson.

Cadet Sergeants,

1. M. A. Westcott,
2. T. Beasley,
3. S. W. Caldwell,
4. J. B. Holman,
5. G. W. Taylor,
6. W. S. Childs,
7. B. A. Webb,
8. R. B. McWhorter,
9. D. J. Duffee,
10. G. A. Young,
11. P. P. Scroggs,
12. H. J. Chatterton,
13. H. G. Culverhouse,
14. W. J. Carter,
15. R. B. Ellyson,
16. J. T. Foy,
17. A. H. Skinner,
18. J. W. Moore,
19. J. M. Mayes,
20. R. W. Williamson,

Cadet Corporals,

1. M. A. Smith,
2. W. C. Oliver,
3. D. M. Clements,
4. G. E. Blue,
5. J. J. Keyes,
6. J. P. Hutcheson,
7. R. S. Boyd,
8. A. L. Young,
9. L. Kelly,
10. M. Lothrop,
11. J. C. Smith,
12. J. E. Grady,
13. J. M. Spearman,
14. H. H. Davis,
15. E. R. Stauffacher,
16. J. F. Reeves,
17. F. Ordway,
18. A. H. Van Duzer,
19. F. M. Douglass,
20. C. L. Speake,
21. J. L. Henderson,
22. C. C. Yonge,
23. W. T. Ewing,
24. C. E. Mohns,
25. J. E. Walker,
26. E. L. Davis,
27. W. A. Harman,
28. L. M. Dinsmore,
29. J. M. Gillespy,
30. W. L. Ewing,
31. B. Weil.

The Cadet Band,

Session 1907-08.

Officers,

A. L. Thomas, Bandmaster.
J. D. Henderson, Assistant Bandmaster.

Military Officers,

W. L. Newberry, Lieutenant.
J. M. Mayes, Drum Major.
J. J. Keyes, Corporal.
B. Weil, Corporal.

Honorary Members,

R. H. Drake,
N. E. Bell,
P. F. Williams.

Members,

W. D. Armstrong,
L. G. Brooks,
O. G. Clements,
A. L. Clothier,
B. T. Collier,
F. M. Grissett,
J. E. Harrison,
F. R. Harsh,
E. A. Haynie,
J. D. Henderson,
J. W. Ingram,
J. J. Keyes,
G. G. Lovvorn,
J. T. McDonald,
H. C. McGregor,
B. H. Moon,
W. L. Newberry,
J. B. Steadham,
B. Weil,
C. P. Wright.

Cadets of the graduating class who were reported to the Adjutant General, U. S. Army, for publication in the "Official Army Register" as having ranked highest in the Military Department:

1889.

A. St. C. Dunstan,
B. H. Crenshaw,
A. J. Burr.

1890.

F. D. Milstead,
J. W. Bivins,
G. W. Emory.

1891.

L. E. Baker,
C. C. Johnson,
F. J. Bivins.

1892.

H. F. Dobbin,
A. L. Jones,
C. L. Brown.

1893.

Joel Dumas,
C. H. Smith,
J. F. Webb.

1894.

C. S. Andrews,
P. P. McKeown,
R. T. Dorsey.

1895.

S. L. Coleman,
H. H. Smith,
L. B. Gammon.

1896.

A. L. Alexander,
W. L. Fleming,
W. M. Williams.

1897.

P. G. Clark,
G. M. Holley,
G. N. Mitcham.

1898.

A. H. Clark,
A. McB. Ransom,
John Haralson.

1899.

I. F. McDonnell,
A. H. Feagin,
T. W. Wert.

1900.

E. M. Mason,
H. P. Powell,
C. W. Nixon.

1901.

A. F. Jackson,
J. D. Foy,
P. S. Haley.

1902.

W. D. Willis,
J. E. D. Yonge,
J. B. Garber.

1903.

H. E. Davis,
H. M. Yonge,
T. J. Dowdell.

1904.

J. McDuffie,
B. L. Shi,
George Dunglingson, Jr.

1905.

R. P. Boyd,
R. M. McCulloh, Jr.,
J. H. Paterson.

1906.

W. H. Foy,
F. H. Mohns,
M. A. Frazer.

1907.

N. B. McLeod,
W. L. Perdue,
G. F. Lipscomb.

REQUIREMENTS FOR ADMISSION.

All applicants for admission should present testimonials of good moral character, and those who come from other colleges must present certificates of honorable discharge.

To enter the freshman class the applicant must be not less than fifteen years of age, and should be qualified to pass a satisfactory examination on the following subjects:

1. Geography and History of the United States.

2. English—(a) English grammar as contained in any standard text. (b) An examination upon sentences containing incorrect English. (c) A composition giving evidence of satisfactory proficiency in spelling, punctuation, grammar, and division into paragraphs.

(d) *Reading.* The composition of 1908 will be upon subjects drawn from one or more of the following works in English Literature: (1) Hughes's *Tom Brown at Rugby;* (2) Goldsmith's *Vicar of Wakefield;* (3) Shakespeare's *Julius Caesar;* (4) Longfellow's *Evangeline;* (5) Scott's *Ivanhoe;* (6) Shakespeare's *Merchant of Venice;* (7) Irving's *Sketch Book;* (8) Macaulay's *Essay on Milton;* (9) Scott's *Marmion;* (10) Dickens's *David Copperfield;* (11) George Eliot's *Silas Marner;* (12) Shakespeare's *Macbeth;* (13) Irving's *Life of Goldsmith;* (14) Lowell's *Vision of Sir Launfal.*

The candidates will be required to present evidence of a general knowledge of the subject matter, and to answer simple questions on the lives of the authors. This part of the examination is intended only to test a general knowledge of the substance of the books.

(e) *Study and Practice.* This part of the examination presupposes the thorough study of the style of the work, and will be upon *Julius Caesar* and the *Essay on Milton.*

Preparation and examination on these works will be necessary before the student is classed as regular in any course.

3. Mathematics—(a) Arithmetic, including fundamen-

tal operations; common and decimal fractions; denominate numbers; the metric system; percentage, including interest and discount; proportion. (b) Algebra to quadratic equations; especial preparation is urged in *fundamental operations: factoring, multiples, divisors and fractions;* (c) two books of geometry.

4. Those applicants who desire to continue the study of Latin should be qualified to pass a satisfactory examination in Latin grammar and the first two books of Cæsar, in addition to the above subjects.

In pronouncing Latin it is recommended that *ā* be pronounced as in *father; ă* as the *a* in *Cuba; ē* as in *prey; ĕ* as in *men; ī* as in *machine; ĭ* as in *cigar; ō* as in *old; ŏ* as in *obey; ū* as in *rule; ŭ* as in *full; j* as *y* in *yard; c* always as *k* in *king; g* always as *g* in *get.*

For admission to the higher classes, students should be prepared to stand satisfactory examination in all of the studies of the lower classes, as shown in the course of study. Students applying for admission to the sophomore class will be examined in mathematics through quadratic equations in algebra, and on all of geometry. Where opportunity has not been offered to pursue special studies required at this college, the system of equivalents will be adopted, and studies which denote an equivalent amount of discipline and training will be accepted as satisfactory. But if not prepared to pass an examination in history and chemistry at the time of application, the applicant will be required before graduation to pass a satisfactory examination on these subjects.

It is absolutely essential that students who hope to succeed should be well grounded in arithmetic, algebra, and geometry.

A working knowledge of the metric system should also be obtained.

ADMISSION ON CERTIFICATE.

Applicants will be admitted without examination on presenting a certificate from any of the CERTIFICATE SCHOOLS named herein.

The following educational institutions having made application to be correlated to this college and having presented an approved course of study, are hereby declared to be CERTIFICATE SCHOOLS, and are granted the privilege set forth in the following:

“Students from certificate schools will be admitted to the fresh-
“man class *without examination* upon the certificate of the presi-
“dent or principal, showing definitely that such students have
“completed satisfactorily all the studies required for admission, as
“stated in the catalogue, and are otherwise admissible.”

The privilege of admitting students to the sophomore class on certificates will be granted only to those approved schools that have had a continuous existence for five years or more, and have previously had pupils admitted to that class without conditions.

The following form of certificate will be used:

I hereby certify that A----------- B--------- has attended the (*name the school or academy*) for --------years, and has studied the following subjects:

in History ---------------------------------------(*name the books*)
in English ------------------------------------- (*name the books*)
in Algebra---------------------------(*state amount accomplished*)
in Geometry -------------------------(*state amount accomplished*)
in Latin ---------------------------------------(*state books read*)
and having passed a satisfactory examination on these subjects, as required in the catalogue for admission to the ---------- class, he is recommended for the same.

Admission by certificate is regarded as provisional.

That is, though admitted to the class for which the certificate calls, the applicant may be required to take special examination in any subject in which his preparation proves unsatisfactory, or, after a fair trial, he may be dropped to a lower class, if he fails to maintain standing in the class to which he may be admitted.

CERTIFICATE SCHOOLS.

University Military School, Mobile	J. D. Wright
Verner Military Institute, Tuscaloosa	W. H. Verner
University School, Montgomery	J. M. Starke
Mt. Willing High School, Mt. Willing	J. W. Wray
State Normal School, Jacksonville	C. W. Daugette
Male Academy, Huntsville	——
Furman Academy, Livingston	L. A. Cockrell
High School, Opelika	I. W. Hill
Eighth District Agricultural School, Athens	J. M. Atkinson
The Hillsborough County High School, Fla.	E. M. Hyde
Edgar's School for Boys, Montgomery	R. Bliss Edgar
Auburn Female Institute	W. F. Osburn
Seventh District Agricultural School, Albertville	J. B. Hobdy
Sixth District Agricultural School, Hamilton	H. O. Sargent

Eutaw Male Academy, Eutaw	H. C. Horton
Anniston Training School for Boys	W. A. White
Prattville Academy	J. D. Lane
Decatur City Schools	J. M. Collier
Dayton Academy	W. H. MacKellar
Georgia Military Academy	J. C. Woodward
Jasper Graded School	W. E. Turnipseed
Tuskegee High School	W. B. Riley
Mobile Military Institute	F. R. Peterson
University High School, Birmingham	I. J. White-M. B. Dickinson
Fourth District Agricultural School, Sylacauga	Geo. H. Thigpen
Gaylesville High School	John R. Ray
Oxford Graded Schools	John R. Bell
Carrollton (Ga.) Academy	
Ninth District Agricultural School, Blountsville	E. A. Miller
Gadsden High School	W. E. Striplin
Boyd High School, Brundidge	B. H. Boyd
Eufaula High School	F. L. McCoy
Union Springs High School	W. R. Harrison
Montgomery High School	C. L. Floyd
Brighton Academy	C. C. Slaton
Southern Agricultural School, Abbeville	C. J. Owens
Barnes' School, Montgomery	E. R. Barnes
Jackson Agricultural School	W. F. Monk
Pensacola Classical School	H. C. Armstrong
Pratt City High School	P. M. McNeil
Berry School	——

ADMISSION OF YOUNG WOMEN.

The privilege of becoming students in this college is granted by the trustees to young women of mature mind and character on the following conditions:

The applicant must be seventeen years of age, and, if a candidate for a degree, be able to pass a satisfactory examination in each of the four subjects named below.

If the applicant is a candidate for admission as a special or irregular student, she must be able to pass a satisfactory examination in two of the subjects named, and may be admitted at an age less than seventeen, with a resident of Auburn acting as guardian, if application is approved by the faculty.

(a) In English—Proficiency in spelling and punctuation; Grammar (Bartlett and McBain); Rhetoric (Lockwood and Emerson's

Composition and Rhetoric and Espenshade's Rhetoric); Scudder's Masterpieces of American Literature; Syle's From Milton to Tennyson.

For requirements in reading in literature, see page 51.

(b) In History—Macy's Our Government; Chambers's History of the United States; Myer's General History.

(c) In Mathematics—Arithmetic; Algebra, including quadratic equations, logarithms, and series; Plane and Solid Geometry; Plane and Spherical Trigonometry as in Wentworth.

(d) In Latin—Grammar, including the forms and syntax; Jones's Latin Prose Composition; translations of selections from Cæsar, Nepos, Virgil, Cicero's Orations, Cicero's Letters, or the equivalent.

The equivalents of these subjects, as in above text-books, may be substituted.

When admitted, upon complying with the conditions above stated, the applicants may enter upon the study of any subject taught in the college and join any class, for which upon examination, they may be found qualified. The only condition imposed will be that they engage in earnest study, and attend the exercises regularly. They will board in town with private families, and attend college only at the hours of their exercises.

ENTRANCE EXAMINATIONS.

Entrance examinations will be held on Wednesday, the 2nd of September, the day on which the session opens. Candidates will also be examined during the session, when application is made for admission.

Applicants who are not prepared to stand the entrance examinations for full admission to the freshman class are admitted to the sub-college department, provided they are *sixteen* years of age, and are found after examination qualified to profit by the instruction given. Those who, after admission, are inattentive to their studies, and neglectful of their duties, will be required to withdraw, but those who are studious and make sufficient progress will be advanced to full admission to the freshman class when they are qualified to pass satisfactorily the required examinations.

Students, upon their arrival at Auburn, will report immediately to the President. No student will be admitted to a recitation in any class previous to matriculation.

NUMBER OF EXERCISES REQUIRED.

All students are required to have *not less than fifteen* recitations per week, or their equivalent, in addition to the exercises in laboratory work, drawing, and military drill. These additional exercises occupy not less than twelve hours per week, and in all give twenty-seven to thirty hours per week required in college exercises.

SPECIAL AND IRREGULAR STUDENTS.

The privilege of electing studies in the lower classes is not granted to young students nor to their parents.

The faculty will assign a student, on admission, to that class of a prescribed course for which he is qualified, and for special reasons, approved by the faculty, he may be permitted to become irregular.

Students qualified to prosecute the studies of the junior class, and those over twenty-one years of age that are not candidates for a degree, are permitted to take, with the advice of the faculty, the subjects of study for which they may on examination prove themselves qualified.

For an applicant to enter upon the study of Civil, Mining, Electrical, or Mechanical Engineering as a special or irregular student he must have studied algebra through quadratics and logarithms, plane geometry, and plane trigonometry.

The professor in charge of a department will decide by examination whether a special student is prepared for admission to his class.

A student who does not take all the studies in a class of one of the degree courses, as prescribed in the catalogue, and is permitted to take an irregular course, will be assigned to a member of the faculty, who will act as his special adviser, and when his course of study has been approved by the faculty, no other change will be permitted without the endorsement of his adviser.

Regular students who fail to pass satisfactory final examinations in any one study become irregular students. They will be classed as regular students pursuing a course for a degree, whenever they can pass the examinations in those subjects in which they were found deficient.

Students, candidates for a degree, who are not in full standing in all the prescribed studies of a class, rank in the military department with that class in which they have the greatest number of studies, and their names are so placed in the catalogue.

ADMISSION TO HIGHER CLASSES.

At the beginning of each term a student in the sub-freshman class may, on application approved by the faculty, be examined for admission to the freshman class in history, English, and mathematics, and be admitted to the freshman class in those subjects in which he passes a satisfactory examination.

Students who have completed satisfactorily all the studies of the sophomore class, as prescribed in the catalogue, in any one of the regular degree courses, can enter, without condition, the junior class in any course except the general course, and the course in pharmacy, in which Latin is required, and the course in chemistry and agriculture, in which botany and physiology are required.

Students who are admitted to the junior class from other institutions, on examination in English, Latin, and mathematics, and who have not completed all the studies of the sophomore class, in order to graduate, will be required to complete the course in chemistry and history as taught in the sophomore class. In addition to these two subjects, students who thus enter the junior class of the course in chemistry and agriculture, will be required to complete the course in botany and physiology in the sophomore class.

COURSES OF INSTRUCTION.

The courses of study include the Physical, Chemical, and Natural Sciences, with their applications; Agriculture, Biology; Horticulture; Mechanics, Astronomy, Mathematics; Drawing; Civil, Electrical, Mechanical, and Mining Engineering; Architecture; Physiology and Veterinary Science, Pharmacy; English, French, German, and Latin Languages; History, Political Economy; Mental and Moral Sciences.

The studies are arranged in regular courses so as to offer liberal and practical education as a preparation for the active pursuits of life.

There are nine degree courses for undergraduates, each leading to the degree of Bachelor of Science (B. S.) and rquiring four years for its completion.

I. COURSE IN AGRICULTURE.
II. COURSE IN CIVIL ENGINEERING.
III. COURSE IN ELECTRICAL ENGINEERING.
IV. COURSE IN MECHANICAL ENGINEERING.
V. COURSE IN MINING ENGINEERING.
VI. COURSE IN ARCHITECTURE.
VII. COURSE IN CHEMISTRY AND METALLURGY.
VIII. COURSE IN PHARMACY.
IX. GENERAL COURSE.
X. TWO-YEAR COURSE IN PHARMACY.
XI. THREE-YEAR COURSE IN PHARMACY.
XII. THREE-YEAR COURSE IN VETERINARY MEDICINE.
XIII. TWO-YEAR COURSE IN MECHANIC ARTS.
XIV. TWO-YEAR COURSE IN AGRICULTURE.

Course I. includes theoretical and practical instruction in those branches that relate to agriculture, horticulture, animal industry, botany and entomology, and is especially adapted to those who propose to devote themselves to agricultural and horticultural pursuits.

Course II. includes the principles and applications of sciences that directly relate to civil engineering, and is adapted to those who expect to enter that profession.

Course III. includes, besides the general principles and applications of the sciences, a special course in the applications of electricity and mechanics, and is arranged to fit men for the profession of electrical engineering.

Course IV. furnishes instruction in steam engineering, materials of construction, drawing, and machine design, electrical engineering, together with laboratory work. The course is intended to qualify men to fill positions in the manufacturing industries.

Course V. includes theoretical and practical instruction in geology, mineralogy, chemistry, civil and electrical engineering, as applied to mines; mapping, exploration; boring; ventilation; timbering, and all the operations pertaining to the profession of mining engineering.

Course VI. has been arranged to give a theoretical and practical knowledge of architecture in order to enable students to take advantage of office opportunities upon graduation. It embraces architectural drawing and design, history, and ornamental architectural engineering, and office practice.

Course VII. provides for thorough theoretical and practical instruction in pure and technical chemistry and metallurgy, and in the scientific branches relating thereto. Students taking this course also pursue the study of German or French during the junior and senior years, and are thus prepared to utilize for reference and for study scientific journals and works published in those languages.

Course VIII. includes, besides the general education of course VII. in the lower classes, a special course in pharmacy and chemistry, and is adapted to those who expect to become pharmacists, manufacturing chemists, or to enter upon the study of medicine.

Course IX. has been arranged to give a general and less technical education in subjects of science and language to meet the wants of those students who have selected no definite vocation in life, as well as of those who propose ultimately to engage in teaching or in some commercial or professional business.

Courses X., XI., XII., XIII., and XIV., have been arranged for the benefit of those students who, for reasons satisfactory to themselves, are unable to continue at college four years and to take one of the regular degree courses.

A student who completes satisfactorily all the work of the senior class in a department, including the laboratory work, with approval of the faculty, may be awarded a certificate of proficiency in said subject.

Students who complete one of the two-year courses will, on passing a satisfactory examination, receive certficates indicating their attainments.

A student who completes the work of the two-year course in pharmacy and submits a satisfactory thesis will be granted the degree of Graduate in Pharmacy, (Ph. G.)

A student who completes the work of the three-year course in pharmacy and submits a satisfactory thesis will be granted the degree of Pharmaceutical Chemist, (Ph. C.)

A student who completes the work of the three-year course in veterinary medicine and submits a satisfactory thesis will be granted the degree of Doctor of Veterinary Medicine. (D. V. M.)

No degree or certificate of proficiency will be given in any course unless the applicant has passed a satisfactory examination in elementary English. Every candidate for a degree will be required to stand this special examination during the senior year.

Declamations and themes or orations are required of all regular students pursuing courses leading to a degree. For requirements, see Department of English.

POSTGRADUATE COURSES.

A more extended postgraduate course of study may be taken by a graduate of this college or of any other institution of equal grade. The completion of a course which leads to a postgraduate degree of Master of Science requires one year's residence at the college, spent in the satisfactory prosecution of a course of study, with such laboratory work as may be approved by the faculty.

The candidate must also present to the faculty a satisfactory thesis showing independent investigation upon some subject pertaining to his course, and must pass an examination, at the close of each term, on the course of study prescribed, in which he must attain a grade of 75 per cent. The examination is written, and also oral in the presence of the faculty.

The subject for the thesis must be submitted to the faculty for approval prior to January 1st, and the thesis given to the professor of English by May 1st.

Applicants for a postgraduate degree and special students in post-senior studies are subject to the same general regulations as other students, and *pay the same fees;* but are exempt from all military duty.

The following courses are prescribed for the degree named:

1. *Master of Science.*—Studies in three departments, in two of which the candidate must have previously completed the full course of the senior class; or in special cases, with the approval of the faculty, a student may devote his full time to work in two departments, in each of which he has completed the full senior course.

2. *Master of Science in Pharmacy.*—Pharmacy and chemistry.

PROFESSIONAL DEGREES IN ENGINEERING.

The professional degree of Civil Engineer, Electrical Engineer, Mechanical Engineer, or Engineer of Mines will be conferred upon graduate students upon the satisfactory completion of the courses of study prescribed, a residence of one year at the Institute being required for the completion of these courses.

A written application stating the degree desired and the course of study selected must be submitted to the faculty at the beginning of the session. A satisfactory thesis must be completed and submitted by May 1st.

The above named professional degrees may be conferred upon graduates of the Alabama Polytechnic Institute in Civil, Electrical, Mechanical, and Mining Engineering, *six* years after graduation, provided four years of the intervening time have been spent in the practice of that branch of engineering in which the candidate graduated, and an approved thesis is submitted to the faculty with a report of the character of the work done.

The above named professional degrees may be conferred four years after graduation upon a graduate who has spent the entire intervening time in the practice of that branch of engineering in which he graduated and has shown unusual aptitude for and ability in the practice of his profession. To obtain the degree upon these considerations, he must have filled satisfactorily a responsible position in charge of important engineering work. As evidence of these facts, he must submit with his application written testimonials from his employers or clients, and an approved thesis shall be submitted.

The following courses of study are prescribed for the degrees named:

Civil Engineer. Civil engineering and any two subjects selected from the following: mathematics, analytical mechanics, mechanical engineering, electrical engineering, mining engineering, bacteriology.

Electrical Engineer. Electrical engineering and mechanical engineering; or electrical engineering, mathematics, and civil engineering.

Mechanical Engineer. Mechanical engineering and machine design; or mechanical engineering, mathematics, and mining engineering.

Engineer of Mines. Graduate students who have completed the course in mining engineering including German, may apply for this degree. The subjects to be pursued are mining engineering, civil engineering, and one other technical subject related to mining and metallurgy, and approved by the faculty.

Special Students in Graduate Studies.—Students who are not graduates, but are qualified in special subjects to prosecute graduate studies, and desire to prepare themselves more thoroughly for professional or special work in any one of the departments of engineering, in chemistry, pharmacy, veterinary science, or other subjects in which instruction is given, may, when qualified, with approval of the faculty, enter this higher department of study and have all the privileges of postgraduate students.

A certificate of proficiency will be given when any one subject of a postgraduate course is satisfactorily completed.

Two degrees will not be given the same year.

SPECIAL ONE-YEAR COURSE IN AGRICULTURE.

Young men over twenty-one years of age who desire to study agriculture will be permitted, without examination, to enter any class under the professor of agriculture, and will be excused from reciting in any other class, from military duty, and from all other college duties; but will be under the general college regulations, and will be required to have their time fully occupied.

They may attend the lectures in agriculture in all the classes and engage in the practical work at the experiment station, in the field, stock-yard, dairy, garden, orchard, vineyard, etc., and may thus in one year, acquire valuable practical knowledge of scientific agriculture.

Laboratory instruction constitutes an important feature in the course of education provided for the students of this institute, and as far as possible all students are required to enter upon laboratory work in some one department.

Laboratory instruction and practical work are given in the following departments:

I. CIVIL ENGINEERING, FIELD WORK, SURVEYING, ETC.

II. ELECTRICAL ENGINEERING, TELEPHONE ENGINEERING.

III. MECHANICAL ENGINEERING.

IV. MINING ENGINEERING.

V. ARCHITECTURE.

VI. MECHANIC ARTS.

VII. TECHNICAL DRAWING.

VIII. PHYSICS.

IX. MINERALOGY.

X. ORE DRESSING.

XI. CHEMISTRY, METALLURGY.

XII. AGRICULTURE.

XIII. ANIMAL INDUSTRY.

XIV. VETERINARY SCIENCE, BACTERIOLOGY, PHYSIOLOGY.

XV. HORTICULTURE.

XVI. BOTANY, BIOLOGY.

XVII. PHARMACY, PHARMACEUTICAL CHEMISTRY.

XVIII. ENTOMOLOGY.

XIX. PHOTOGRAPHY.

NOTE.—Special work in English or history may be taken by students in the general course as a substitute for laboratory work.

I. COURSE IN AGRICULTURE.

The numerals before the subjects indicate the number of hours per week; the numerals in brackets following the subjects, the number of course in department named.

FRESHMAN CLASS.

First Term.	*Second Term.*	*Third Term.*
5. English.	5. English.	5. English.
2. History.	2. History.	3. History.
5. Mathematics.	5. Mathematics.	5. Mathematics.
3. Elementary Physics.	3. Elementary Physics.	2. Agriculture, An. Ind.
3. Drawing.	3. Drawing.	3. Drawing.
6. Mechanic Arts Lab'y.	6. Mechanic Arts Lab'y.	6. Mechanic Arts Lab'y.
3. Military Drill.	3. Military Drill.	3. Military Drill.

SOPHOMORE CLASS.

First Term.	*Second Term.*	*Third Term.*
3. English.	3. English.	3. English.
3. History.	3. History.	3. Botany.
5. Mathematics.	5. Mathematics.	4. Mathematics.
		1. Surveying.
4. General Chemistry.	4. General Chemistry.	4 General Chemistry.
2. Animal Industry.	2. Agriculture [2]	2. Agriculture [3].
2. Physiology.	2. Physiology.	2. Physiology.
3. Drawing.	3. Drawing.	4. Botanical Lab'y.
6. Chemical Lab'y.	6. Chemical Lab'y.	6. Chemical Lab'y.
4. Animal Ind'ry Lab.	2. Animal Ind'ry Lab.	
	2. Agricultural Lab. [2]	2. Agricult'l Lab'y. [3].
3. Military Drill.	3. Military Drill.	3. Military Drill.

JUNIOR CLASS.

First Term.	*Second Term.*	*Third Term.*
3. English, German, or French.	3. English, German, or French.	3. English, German, or French.
3. Physics.	3. Physics.	3. Physics.
2. Organic Chemistry.	2. Agricultural Chem.	3. Agricultural Chem.
2. Botany.	2. Botany.	2. Botany.
2. Veterinary Sc. (a).	2. Veterinary Sc. (a).	2. Veterinary Sc. (a).
2. Agriculture [4].	2. Animal Industry.	2. Agriculture [5].
2. Horticulture [1].	2. Horticulture. [2].	2. Animal Industry.
1. Military Tactics.	1. Military Tactics.	1. Military Tactics.
2. Botanical Lab'y.	2. Botanical Lab'y.	2. Botanical Lab'y.
3. Clinical Lab'y. (a).	3. Clinical Lab'y. (a).	3. Clinical Lab'y. (a).
4. Horticult'l Lab. 2. Agricult'l Lab. } (b)	4. Horticult'l Lab. 2. An. Ind. Lab. } (b)	2. Horticult'l Lab. 4. Animal Ind. Lab. } (b)
		2. Agricultural Lab'y.
3. Military Drill.	3. Military Drill.	3. Military Drill.

(a) French or German may be substituted for veterinary science.

(b) Six hours of chemical laboratory work may be substituted.

SENIOR CLASS.

The studies of the Course in Agriculture are divided into five Groups, as follows;

Group "A", Agriculture. Giving special prominence to crops, soils, and farm machinery.

Group "B", Horticulture. With special reference to fruit growing, trucking, and landscape gardening.

Group "C", Animal Industry. Giving special prominence to all work pertaining to live stock.

Group "D", Agricultural Chemistry. Especially designed to prepare students for experiment station and fertilizer control work.

Group "E", Botany. Designed to train students for station work or to pursue advanced work in botany.

The elective work in each group must be approved at the beginning of the senior year by the president and the professor in charge, and with the required work must aggregate at least twenty-one hours counting two hours laboratory equal to one hour.

The giving of an elective course will be optional with the professor in charge unless it be elected by at least four students.

GROUP "A", AGRICULTURE.

First Term.	*Second Term.*	*Third Term.*
2. Agriculture. [6].	2. Agriculture. [12].	2. Agriculture. [8]
2. Agricultural Lab'y.	2. Agricultural Lab'y.	2. Agricultural Lab'y.
3. Entomology. [1].	3. Forestry. [Hort. 8].	3. Entomology. [2].
2. Geology.	2. Geology.	2. Geology.
1. Military Science.	1. Military Science.	1. Military Science.
4. German or French. (c)	4. German or French. (c).	4. German or French. (c).
2. Entomological Lab'y.	2. Forestry Lab'y.	2. Entomological Lab'y.
Thesis.	Thesis.	Thesis.

Electives. The equivalent of at least seven hours from the following subjects:

First Term.	*Second Term.*	*Third Term.*
2. Farm Mach. [Agr. 10].	2. Soils. [Agr. 11].	2. Soils. [Agr. 11].
3. Farm Mach. Lab'y.	3. Soils. [Agr. 11] Lab.	3. Soils. [Agr. 11] Lab.
2. Animal Industry.	2. Animal Industry.	2. Animal Industry.
2. Animal Ind. Lab'y.	2. Animal Ind. Lab'y.	2. Animal Ind. Lab'y.
3. Horticulture. [3].	3. Horticulture. [4].	3. Horticulture. [5].
4. Horticulture Lab'y.	4. Horticulture [7] Lab.	4. Horticulture [6] Lab.
2. Botany.	2. Botany.	2. Botany.
4. Botany Lab'y.	4. Botany Lab'y.	4. Botany Lab'y.
2. Veterinary Science.	2. Veterinary Science.	2. Veterinary Science.
3. Veterinary Sc. Lab.	3. Veterinary Sc. Lab.	3. Veterinary Sc. Lab.
3. Industrial Chem.	3. Industrial Chem.	3. Industrial Chem.
2. Organic Chem.	2. Organic Chem	2. Organic Chem.
6. Chemical Lab'y.	6. Chemical Lab'y.	6. Chemical Lab'y.
4. French.	4. French.	4. French.

GROUP "B", HORTICULTURE.

First Term.	*Second Term.*	*Third Term.*
3. Horticulture [3].	3. Horticulture [4[.	3. Horticulture [5].
4. Horticulture Lab'y.	4. Horticulture [7] Lab.	4. Horticulture [6] Lab.
3. Entomology [1].	3. Forestry [Hort. 8].	3. Entomology [2].
2. Entomology Lab'y.	2. Forestry Lab'y.	2. Entomology Lab'y.
2. Geology.	2. Geology.	2. Geology.
1. Military Science.	1. Military Science.	1. Military Science.
4. German or French(c).	4. German or French(c).	4. German or French(c)
Thesis.	Thesis.	Thesis.

Electives. The equivalent of at least five hours from the elective subjects as listed under Group "A".

GROUP "C", ANIMAL INDUSTRY.

First Term.	*Second Term.*	*Third Term.*
2. Animal Industry.	2. Animal Industry.	2. Animal Industry.
4. Animal Ind. Lab'y.	4. Animal Ind. Lab'y.	4 Animal Ind. Lab'y,
3. Entomology [1].	3. Forestry [Hort. 8] or Meat and Milk Ins.	3. Entomology [2].
2. Entomology Lab'y.		2. Entomology Lab'y.
2. Geology.	2. Geology.	2. Geology.
1. Military Science.	1. Military Science.	1. Military Science.
4. German or French (c).	4. German or French(c).	4 German or French(c).
Thesis.	Thesis.	Thesis.

Electives. The equivalent of at least six hours from the elective subjects as listed under Group "A", or the Third Year of Course in Veterinary Medicine.

GROUP "D", AGRICULTURAL CHEMISTRY.

First Term.	*Second Term.*	*Third Term.*
6. Chemical Lab'y.	6. Chemical Lab'y.	6. Chemical Lab'y.
3. Entomology [1].	3. Forestry [Hort 8].	3. Entomology [2].
2. Entomology Lab'y.	2. Forestry, Hort. Lab.	2. Entomology Lab'y.
2. Geology.	2. Geology.	2. Geology.
1. Military Science.	1. Military Science.	1. Military Science.
4. German or French(c).	4. German or French(c).	4. German or French(c).

Electives. The equivalent of at least seven hours from the elective subjects as listed under Group "A".

GROUP "E", BOTANY.

First Term.	*Second Term.*	*Third Term.*
4. German.	4. German.	4. German.
2. Geology.	2. Geology.	2. Geology.
2. Organic Chemistry.	2. Organic Chemistry.	2. Organic Chemistry.
2. (4) Botany [10].	2. (4) Botany [11].	2. (4) Botany [12].
2. (4) Botany [14].	2. (4) Botany [15].	2. (4) Botany [16].
2. (4) Botany [18].	2. (4) Botany [19].	2. (4) Botany [20].
2. Botany [26].	2. (4) Botany [27].	2. Botany [28].
1. Military Science.	1. Military Science.	1. Military Science.
Thesis.	Thesis.	Thesis.

Electives. The equivalent of at least three hours from the elective subjects as listed under Group "A".

(c) English, political economy, and one additional subject may be substituted for German or French.

II. COURSE IN CIVIL ENGINEERING.

FRESHMAN CLASS.

First Term.	*Second Term.*	*Third Term.*
5. English.	5. English.	5. English.
2. History.	2. History.	3. History.
5. Mathematics.	5. Mathematics.	5. Mathematics.
3. Elementary Physics.	3. Elementary Physics.	2. Agriculture.
3. Drawing.	3. Drawing.	3 Drawing.
6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.
3. Military Drill.	3. Military Drill.	3. Military Drill.

SOPHOMORE CLASS.

First Term.	*Second Term.*	*Third Term.*
3. English.	3. English.	3. English.
3. History.	3. History.	3. Elem't'y Mechanics.
5. Mathematics	5. Mathematics.	4. Mathematics.
		4. Surveying (C. E.).
4. General Chemistry.	4. General Chemistry	4. General Chemistry.
3. Descriptive Geo'try.	3. Descriptive Geo'try.	3. Descriptive Geo'try.
3. Drawing (a).	3. Drawing (a).	3. Drawing (a).
4. Mechanic Art Lab'y.	4. Mechanic Art Lab'y.	4. Mechanic Art Lab'y
2. Physical Lab'y.	2. Physical Lab'y.	2. Physical Lab'y.
3. Military Drill.	3. Military Drill.	3. Military Drill.

JUNIOR CLASS.

First Term.	*Second Term.*	*Third Term.*
3. English, French, or German.	3. English, French, or German.	3. English, French, or German.
3. Phyics.	3. Physics.	3. Physics.
5. Mathematics.	5. Mathematics.	5. Mathematics.
5. Civil Engineering (3).	5. Civil Engineering (C. E. 4).	5. Civil Engineering (C. E. 4-6).
5. Structural Drafting (C. E. 12).	5. Structural Drafting (C. E. 12).	5. Structural Drafting (C. E. 12).
1. Military Tactics.	1. Military Tactics.	1. Military Tactics.
4. Machine Shop or Mineralogy.	4. Machine Shop, or Mineralogy.	4. Machine Shop or Mineralogy.
6. Field and Office Work in Survey'g.	3. Field Work, Surveying.	6. Field and Office Work in Surveying.
	3. Graphic Statics (C. E. 5).	
3. Military Drill.	3. Military Drill.	3. Military Drill

SENIOR CLASS.

First Term.	*Second Term.*	*Third Term.*
2. English Literature, French, or German	2. Political Economy, French, or German.	2. Polit. Economy, French, or German.
2. Physics.	2. Physics.	2. Astronomy.
2. Geology.	2. Geology.	2. Geology.
3. Mathematics.	3. Mathematics.	3. Mathematics.
5. Civil Engineering. (C. E. 8-9).	5. Civil Engineering (C. E. 10).	5. Civil Engineering (C. E. 11).
5. Structural Design (C. E. 13).	5. Struct'l Design (C. E. 13).	5. Structural Design (C. E. 13).
1. Military Science.	1. Military Science.	1. Military Science.
6. Field and Office Work in Surveying.	4. Strength of Materials Lab'y (Mech. Eng.)	
	6. Thesis. (C. E. 14).	6. Thesis.

SUMMER WORK.

Four weeks in summer surveying camp, 60 hours a week, devoted to practical field work in surveying. This work is required of all students in the courses in civil and mining engineering.

(a). Mechanical drawing may be substituted.

III. COURSE IN ELECTRICAL ENGINEERING.

In the freshman and sophomore classes the same studies are prescribed as in Course II. in Civil Engineering.

JUNIOR CLASS.

First Term.	*Second Term.*	*Third Term.*
3. English, French, or German.	3. English, French, or German,	3. English, French, or German.
3. Physics.	3. Physics.	3. Phyics.
5. Mathematics.	5. Mathematics.	5. Mathematics.
4. Electrical Engineering.	4. Electrical Engineering.	4. Electrical Engineering.
3. Mechanical Engineering.	3. Mechanical Engineering.	3. Mechanical Engineering.
4. Mechanical Drawing.	4. Mechanical Drawing,	4. Mechanical Drawing.
4. Electrical Lab'y.	4. Electrical Lab'y.	4. Electrical Lab'y.
6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y,	6. Mechanic Art Lab'y.
1. Military Tactics.	1. Military Tactics.	1. Military Tactics.
3. Military Drill.	3. Military Drill.	3. Military Drill.

SENIOR CLASS.

First Term.	*Second Term.*	*Third Term.*
2. English Literature (a).	2. Political Economy (a).	2. Political Economy (a).
2. Physics.	2. Physics.	2. Astronomy.
3. Mathematics.	3. Mathematics.	3. Mathematics.
5. Electrical Engineering.	5. Electrical Engineering.	5. Electrical Engineering.
2. Telephone Engineering.	2. Telephone Engineering.	2. Telephone Engineering.
5. Steam Engines and Boilers.	5. Heat and Heat Engines.	5. Heat and Heat Engines.
1. Military Science.	1. Military Science.	1. Military Science.
		1. Specifications and Contracts.
2. Electrical Designing.	2. Electrical Designing.	2. Electrical Designing.
4. Electrical Lab'y.	4. Electrical Lab'y.	4. Electrical Lab'y.
2. Telephone Lab'y.	2. Telephone Lab'y.	2. Telephone Lab'y
4. Mech. Eng. Lab'y.	4. Mech. Eng. Lab'y.	4. Mech. Eng. Lab'y.

(a) French or German may be substituted,

IV. COURSE IN MECHANICAL ENGINEERING.

In the freshman and sophomore classes the same studies are prescribed as in Course II. in Civil Engineering.

JUNIOR CLASS.

First Term.	*Second Term.*	*Third Term.*
3. English, French, or German.	3. English, French, or German.	3. English, French, or German.
3. Physics.	3. Physics.	3. Physics.

5. Mathematics.	5. Mathematics.	5. Mathematics.
3. Mechanical Eng.	3. Mechanical Eng.	3. Mechanical Eng.
3. Electrical Eng.	3. Electrical Eng.	3. Electrical Eng.
5. Machine Design.	5. Machine Design.	5. Machine Design.
4. Electrical Lab'y.	4. Electrical Lab'y.	4. Electrical Lab'y.
6. Shop Work.	6. Shop Work.	6. Shop Work.
1. Military Tactics.	1. Military Tactics.	1. Military Tactics.
3. Military Drill.	3. Military Drill.	3. Military Drill.

SENIOR CLASS.

First Term.	*Second Term.*	*Third Term.*
2. English Lite'ture(a).	2. PoliticalEconomy(a).	2. Political Economy(a).
2. Physics.	2. Physics.	2. Astronomy.
3. Mathematics.	3. Mathematics.	3. Mathematics.
2. Electrical Eng.	5. Hydraulics.	3. Materials of Mach's.
2. Gas Engines.	5. Thermodynamics.	2. Electrical Eng.
3. Mechanics of Mt'ls.	2. Heating and Venti'g.	5. Thermodynamics.
5. Power Plant Eng.	7. Machine Design.	2. Contracts and Specifications.
7. Machine Design.	2. Electrical Lab'y.	7. Machine Design.
2. Electrical Lab'y.	4. Mechanical Lab'y.	2. Electrical Lab'y.
4. Mechanical Lab'y.		4. Mechanical Lab'y.
1. Military Science.	1. Military Science.	1. Military Science.

(a) French or German may be substituted.

V. COURSE IN MINING ENGINEERING.

In the freshman and sophomore classes the same studies are prescribed as in Course II. in Civil Engineering.

JUNIOR CLASS.

First Term.	*Second Term.*	*Third Term.*
3. German (a).	3. German (a).	3. German (a).
3. Physics.	3. Physics.	3. Physics.
5. Mathematics.	5. Mathematics.	5. Mathematics.
	3. Mechanics.	3. Mechanics.
2. Geology.	2. Geology.	2. Geology.
6. Drawing.	3. Drawing.	3. Drawing.
5. Surveying.	5. Mining Engineering.	5. Mining Engineering.
4. Lab'y. Mineralogy.	4. Lab'y. Mineralogy.	4. Lab'y. Mineralogy.
4. Machine Shop.	4. Machine Shop.	4. Machine Shop.
3. Field Work.	3. Field Work.	3. Field Work.
1. Military Tactics.	1. Military Tactics.	1. Military Tactics.
3. Military Drill.	3. Military Drill.	3. Military Drill.

SENIOR CLASS.

First Term.	*Second Term.*	*Third Term.*
2. German (a).	2. German (a).	2. German (a).
2. Physics.	2. Physics.	2. Astronomy.
2. Geology.	5. Hydraulics.	2. Geology.
3. Mathematics.	3. Mathematics.	3. Mathematics.
3. Min. Engineering.	3. Min. Engineering.	3. Min. Engineering.
2. Electrical Engineering.	2. Electrical Engineering.	2. Electrical Engineering.
2. Metallurgy.	2. Metallurgy.	2. Metallurgy.

3. Drawing.	3. Drawing.	3. Drawing.
1. Military Science.	1. Military Science.	1. Military Science.
8. Chem. Lab'y. and Assaying.	8. Chem. Lab'y. and Assaying.	8. Chem. Lab'y. and Assaying.
3. Metallurgical Lab'y.	3. Metallurgical Lab'y.	3. Metallurgical Lab'y.

(a) French or English may be substituted.

VI. COURSE IN ARCHITECTURE.

FRESHMAN CLASS.

First Term.	*Second Term.*	*Third Term.*
5. English.	5. English.	5. English.
2. History.	2. History.	3. History.
5. Mathematics.	5. Mathematics.	5. Mathematics.
3. Elementary Physics.	3. Elementary Physics.	2. Agriculture.
3. Drawing.	3. Drawing.	3. Drawing.
6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.
3. Military Drill.	3. Military Drill.	3. Military Drill.

SOPHOMORE CLASS.

First Term.	*Second Term.*	*Third Term.*
3. English or Latin.	3. English or Latin.	3. English or Latin.
3. History.	3. History.	3. Elem't'y Mechanics.
5. Mathematics.	5. Mathematics.	5. Mathematics.
3. General Chemistry.	3. General Chemistry.	3. General Chemistry.
3. Descriptive Geom.	3. Descriptive Geom.	3. Descriptive Geom.
3. Arch. Drawing.	3. Arch. Drawing.	3. Arch. Drawing.
4. Mechanic Art Lab'y.	4. Mechanic Art Lab'y.	4. Mechanic Art Lab'y.
2. Chemical Lab'y.	2. Chemical Lab'y.	2. Chemical Lab'y.
2. Physical Lab'y.	2. Physical Lab'y.	2. Physical Lab'y.
3. Military Drill.	3. Military Drill.	3. Military Drill.

JUNIOR CLASS.

First Term.	*Second Term.*	*Third Term.*
3. French.	3. French.	3. French.
3. Physics.	3. Physics.	3. Physics.
	3. Mechanics.	
5. Mathematics.	5. Mathematics.	5. Mathematics.
4. Graphics.	4. Graphics.	4. Graphics.
3. Architectural History.	3. Architectural History.	3. Architectural History.
1. Theory of Architecture.	1. Theory of Architecture.	1. Theory of Architecture.
10. Drawing and Design.	10. Drawing and Design.	10. Drawing and Design.
1. Military Tactics.	1. Military Tactics.	1. Military Tactics.
3. Military Drill.	3. Military Drill.	3. Military Drill.

SENIOR CLASS.

First Term.	*Second Term.*	*Third Term.*
2. English.	2. Political Economy.	2. Political Economy.
2. Physics.	2. Physics.	2. Astronomy.
3. Mathematics.	3. Mathematics.	3. Mathematics.

5. Architectural En'g.	5. Architectural En'g.	5. Architectural En'g.
3. Specifications and Building Material.	3. Specifications and Building Material.	3. Specifications and Building Material.
16. Architectural Drawing and Design.	16. Architectural Drawing and Design.	16. Architectural Drawing and Design.
1. Military Science.	1. Military Science.	1. Military Science.

VII. COURSE IN CHEMISTRY AND METALLURGY.

In the freshman and sophomore classes the same studies are prescribed as in Course I. in Agriculture and Chemistry, or in Course IX. in General Course.

JUNIOR CLASS.

First Term.	*Second Term.*	*Third Term.*
3. English.	3. English.	3. English.
3. Physics.	3. Physics.	3. Physics.
4. Industrial Chemistry.	4. Industrial Chemistry.	4. Industrial Chemistry.
2. Organic Chemistry.	2. Organic Chemistry.	2. Organic Chemistry.
4. Mineralogy Lab'y.	4. Mineralogy Lab'y.	4. Mineralogy Lab'y.
2. Economic Geology.	2. Economic Geology.	2. Economic Geology.
1. Military Science.	1. Military Science.	1. Military Science.
9. Chemical Lab'y.	9. Chemical Lab'y.	9. Chemical Lab'y.
3. Military Drill.	3. Military Drill.	3. Military Drill.

SENIOR CLASS.

First Term.	*Second Term.*	*Third Term.*
2. English Literature.	2. Political Economy.	2. Political Economy.
2. Physics or Physical Chemistry.	2. Physics or Physical Chemistry.	2. Astronomy or Physical Chemistry.
3. German or French.	3. German or French.	3. German or French.
2. Geology.	2. Geology.	2. Geology.
3. Metallurgy and Engineering Chem.	3. Metallurgy and Engineering Chem.	3. Metallurgy and Engineering Chem.
2. Theoretical Chem.	2. Theoretical Chem.	2. Theoretical Chem.
1. Military Science.	1. Military Science.	1. Military Science.
9. Chem. Lab'y. and Assaying.	9. Chem. Lab'y and Assaying.	9. Chem. Lab'y. and Assaying.
3. Metallurgical Designing, or Metallurgical Lab'y.	3. Metallurgical Designing or Metallurgical Lab'y.	3. Metallurgical Designing or Metallurgical Lab'y.

VIII. COURSE IN PHARMACY.

FRESHMAN CLASS.

First Term.	*Second Term.*	*Third Term.*
3. English.	3. English.	3. English.
2. History.	2. History.	3. History.
4. Latin.	4. Latin.	3. Latin.
5. Mathematics.	5. Mathematics.	5. Mathematics.

3. Drawing.	3. Drawing.	3. Drawing.
6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.
		2. Agriculture.
3. Military Drill.	3. Military Drill.	3. Military Drill.

SOPHOMORE CLASS.

First Term.	*Second Term.*	*Third Term.*
5. Latin.	5. Latin.	5. Latin.
3. History.	3. History.	3. Botany.
5. Mathematics.	5. Mathematics.	5. Mathematics.
3. General Chemistry.	3. General Chemistry.	3. General Chemistry.
2. Physiology.	2. Physiology.	2. Physiology.
3. Drawing.	3. Drawing.	3. Drawing.
6. Chemical Lab'y.	6. Chemical Lab'y.	6. Chemical Lab'y.
		4. Botanical Lab'y.
3. Military Drill.	3. Military Drill.	3. Military Drill.

JUNIOR CLASS.

First Term.	*Second Term.*	*Third Term.*
3. English (a).	3. English (a).	3. English (a).
3. Physics.	3. Physics.	3. Physics.
4. Botany.	4. Botany.	4. Botany.
3. Pharmacy.	3. Pharmacy.	3. Pharmacy.
6. Pharmaceutical Lab.	6. Pharmaceutical Lab.	6. Pharmaceutical Lab.
4. Pharmacognosy.	4. Pharmacognosy.	4. Pharmacognosy.
6. Chemical Lab'y.	6. Chemical Lab'y.	6. Chemical Lab'y.
1. Military Tactics.	1. Military Tactics.	1. Military Tactics.
3. Military Drill.	3. Military Drill.	3. Military Drill.

SENIOR CLASS.

First Term.	*Second Term.*	*Third Term.*
3. Bacteriology.	3. Bacteriology.	3. Materia Medica.
2. Organic Chemistry.	2. Organic Chemistry.	2. Organic Chemistry.
5. Pharmacy.	5. Pharmacy.	5. Pharmacy.
4. Prescriptions.	4. Prescriptions.	4. Prescriptions.
1. Military Science.	1. Military Science.	1. Military Science.
6. Chemical Lab'y.	6. Chemical Lab'y.	7. Toxicology.
3. Bacteriology Lab'y.	3. Bacteriology Lab'y.	3. Urinalysis.
15. Pharmaceutical Lab'y.	15. Pharmaceutical Lab'y.	15. Pharmaceutical Lab'y.

(a) French or German may be substituted.

IX. GENERAL COURSE.

FRESHMAN CLASS.

First Term.	*Second Term.*	*Third Term.*
3. English.	3. English.	3. English.
2. History.	2. History.	3. History.
4. Latin.	4. Latin.	3. Latin.
5. Mathematics.	5. Mathematics.	5. Mathematics.
3. Drawing.	3. Drawing.	3. Drawing.
		2. Agriculture.
6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.
3. Military Drill.	3. Military Drill.	3. Military Drill.

SOPHOMORE CLASS.

First Term.	*Second Term.*	*Third Term.*
5. Latin.	5. Latin.	5. Latin.
3. History.	3. History.	3. History (a).
5. Mathematics.	5. Mathematics.	5. Mathematics.
3. General Chemistry.	3. General Chemistry.	3. General Chemistry.
3. Drawing.	3. Drawing.	3. Drawing.
4. Mechanic Art Lab'y.	4. Mechanic Art Lab'y.	4. Mechanic Art Lab'y.
2. Chemical Lab'y.	2. Chemical Lab'y.	2. Chemical Lab'y.
3. Military Drill.	3. Military Drill.	3. Military Drill.

JUNIOR CLASS.

First Term.	*Second Term.*	*Third Term.*
3. English.	3. English.	3. English.
3. Physics.	3. Physics.	3. Physics.
3. Mathematics.	3. Mathematics.	3. Mathematics.
3. French.	3. French.	3. French.
3. German.	3. German.	3. German.
3. Latin.	3. Latin.	3. Latin.
1. Military Tactics.	1. Military Tactics.	1. Military Tactics.
6. Lab'y. Work (b).	6. Lab'y. Work (b).	6. Lab'y. Work (b).
3. Military Drill.	3. Military Drill.	3. Military Drill.

SENIOR CLASS.

First Term.	*Second Term.*	*Third Term.*
2. English.	2. Political Economy.	2. Political Economy.
2. Mental Science.	2. Mental Science.	2. Mental Science.
		2. Astronomy.
2. Geology.	2. Geology.	2. Geology.
4. French.	4. French.	4. French.
4. German.	4. German.	4. German.
3. Latin.	3. Latin.	3. Latin.
1. Military Science.	1. Military Science.	1. Military Science.
6. Lab'y. Work (b).	6. Lab'y. Work (b).	6. Lab'y. Work (b).

(a) Botany or Mechanics may be substituted. (b) The student may elect the laboratory of any department for which he may be qualified.

X. TWO-YEAR COURSE IN PHARMACY.

FIRST YEAR.

First Term.	*Second Term.*	*Third Term.*
3. English.	3. English.	3. Botany.
3. General Chemistry.	3. General Chemistry.	3. General Chemistry.
2. Chemical Lab'y.	2. Chemical Lab'y.	2. Chemical Lab'y.
2. Physiology.	2. Physiology.	2. Physiology.
3. Pharmacy.	3. Pharmacy.	3. Pharmacy.
4. Pharmacognosy.	4. Pharmacognosy.	4. Pharmacognosy.
6. Chemical Lab'y.	6. Chemical Lab'y.	6. Chemical Lab'y.
		4. Botanical Lab'y.
3. Military Drill.	3. Military Drill.	3. Military Drill.
6. Pharmaceutical Lab'y.	6. Pharmaceutical Lab'y.	6. Pharmaceutical Lab'y.

SECOND YEAR.

First Term.	*Second Term.*	*Third Term.*
5. Pharmacy.	5. Pharmacy.	5. Pharmacy.
3. Prescriptions.	3. Prescriptions.	3. Prescriptions.
15. Pharmaceutical Lab'y.	15. Pharmaceutical Lab'y.	15. Pharmaceutical Lab'y.
2. Organic Chemistry.	2. Organic Chemistry.	2. Organic Chemistry.
6. Chemical Lab'y.	6. Chemical Lab'y.	6. Toxicology.
6. Bacteriology.	6. Bacteriology.	3. Materia Medica.
4. Botany.	4. Botany.	4. Botany.
3. Military Drill.	3. Military Drill.	3. Military Drill.

XI. THREE-YEAR COURSE IN PHARMACY.

In the first and second years the same studies are prescribed as in Course X.

THIRD YEAR.

First Term.	*Second Term.*	*Third Term.*
20. Pharmaceutical Chemistry and Lab'y.	20. Pharmaceutical Chemistry and Lab'y.	20. Pharmaceutical Chemistry and Lab'y.
15. Chemistry and Chemical Lab'y.	15. Chemistry and Chemical Lab'y.	15. Chemistry and Chemical Lab'y.
3. Bacteriological Lab'y.	3. Bacteriological Lab'y.	3. Bacteriological Lab'y.

XII. THREE-YEAR COURSE IN VETERINARY MEDICINE.

FIRST YEAR.

First Term.	*Second Term.*	*Third Term.*
3. General Chemistry.	3. General Chemistry.	3. General Chemistry.
2. Physiology.	2. Physiology.	2. Physiology.
3. Physics.	3. Physics.	3. Physics.
2. Anatomy.	2. Anatomy.	2. Anatomy.
5. Microscopy.	5. Histology.	5. Embryology.
2. Live stock management.	2. Live stock management.	2. Feeding live stock.
12. Anatomy Lab'y.	12. Anatomy Lab'y.	12. Anatomy Lab'y.
6. Chemical Lab'y.	6. Chemical Lab'y.	6. Chemical Lab'y.
3. Military Drill.	3. Military Drill.	3. Military Drill.

SECOND YEAR.

First Term.	*Second Term.*	*Third Term.*
2. Botany.	2. Poisonous Plants.	2. Medicinal Plants.
5. Pharmacy.	5. Pharmacy.	5. Pharmacy.
2. Comparative Physiology.	2. Comparative Physiology.	2. Comparative Physiology.
3. Bacteriology.	3. Bacteriology.	3. Materia Medica.
2. Obstetrics.	2. Obstetrics and Surgery.	2. Surgery.
3. Veterinary Medicine.	3. Veterinary Medicine.	3. Veterinary Medicine.
	3. Pathology.	3. Pathology.

3. Bacteriology Lab'y.	3. Bacteriology Lab'y.	3. Surgical Exercises.
	3. Pathology Lab'y.	3. Pathology Lab'y.
12. Anatomy and Clinical Lab'y.	12. Anatomy and Clinical Lab'y.	12. Anatomy and Clinical Lab'y.
3. Military Drill.	3. Military Drill.	3. Military Drill.

THIRD YEAR.

First Term.	*Second Term.*	*Third Term.*
2. Animal Husbandry.	2. Dairying.	7. Toxicology.
3. Therapeutics.	3. Therapeutics.	3. Urinalysis.
2. Surgery.	2. Surgery.	2. Surgery.
3. Veterinary Medicine.	3. Veterinary Medicine.	3. Veterinary Medicine.
2. Infectious Diseases.	2. Infectious Diseases.	2. Infectious Diseases.
2. Parasites.	2. Parasites.	2. Milk Adulterants.
3. Special Pathology.	3. Meat Inspection.	2. Milk Inspection.
12. Anatomy and Clinical Laboratory.	12. Anatomy and Clinical Laboratory.	12. Anatomy and Clinical Laboratory.
4. Thesis.	4. Thesis.	4. Thesis.
3. Military Drill.	3. Military Drill.	3. Military Drill.

XIII. TWO-YEAR COURSE IN MECHANIC ARTS.

FIRST YEAR.

First Term.	*Second Term.*	*Third Term.*
5. English.	5. English.	5. English.
2. History.	2. History.	3. History.
5. Mathematics.	5. Mathematics.	5. Mathematics.
3. Elementary Physics.	3. Elementary Physics.	2. Agriculture.
3. Drawing.	3. Drawing.	3. Drawing.
6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.
3. Military Drill.	3. Military Drill.	3. Military Drill.

SECOND YEAR.

First Term.	*Second Term.*	*Third Term.*
3. English.	3. English.	3. English.
5. Mathematics.	5. Mathematics.	5. Mathematics.
3. Physics.	3. Physics.	3. Physics.
3. Drawing.	3. Drawing.	3. Drawing.
12. Mech. Art Lab'y.	12. Mech. Art Lab'y.	12. Mech. Art Lab'y.
3. Military Drill.	3. Military Drill.	3. Military Drill.

XIV. TWO-YEAR COURSE IN AGRICULTURE.

FIRST YEAR.

First Term.	*Second Term.*	*Third Term.*
2. Dairying.	2. Soils and Cultivation.	2. Forage Plants.
2. Veterinary Science.	2. Veterinary Science.	2. Veterinary Science.
3. Chemistry.	3. Chemistry.	3. Chemistry.
3. English.	3. English.	3. English.
2. Physiology.	2. Physiology.	2. Physiology.
2. Livestock Management.	2. Stock Feeding.	2. Breeds of Livestock. 2. Botany.
4. Butter Making and	4. Judging Cattle,	4. Farm Practice.

Milk Testing.	Hogs, Mules, and Sheep.	
3. Veterinary Practice.	3. Veterinary Practice.	3. Veterinary Practice.
2. Chemical Lab'y.	2. Chemical Lab'y.	2. Chemical Lab'y.
6. Carpentry.	6. Mechanic Arts and Farm Machinery.	4. Botanical Lab'y.
3. Military Drill (a).	3. Military Drill (a).	3. Military Drill (a).

(a) Special agricultural students who are of age are excused from military drill.

SECOND YEAR.

First Term.	*Second Term.*	*Third Term.*
2. Cotton Culture and Grading.	2. Miscellaneous Farm Crops.	2. Farm Management.
2. Animal Breeding.	2. Stock Feeding.	3. Bacteriology.
2. Veterinary Science.	2. Veterinary Science.	2. Veterinary Science.
3. Insects.	3. Fruit Growing.	3. Vegetable Gard'g.
2. Agr'l Chemistry.	2. Agr'l Chemistry.	3. Industrial Chemistry
2. Botany.	2. Plant Breeding.	2. Diseases of Plants.
2. Corn and Small Grain.		
4. Farm Crops.	2. Crops and Drainage	
3. Veterinary Practice.	3. Veterinary Practice.	3. Veterinary Practice.
2. Botanical Lab'y.	2. Plant Breed'g Lab'y.	2. Plant Diseases Laboratory.
6. Chemical Lab'y.	6. Chemical Lab'y.	6. Chemical Lab'y.
	4. Horticultural Lab'y.	4. Horticultural Lab'y.

NOTE.—In case special students in agriculture have conflicts in schedule, satisfactory substitutes will be accepted.

SCHEDULE OF EXERCISES

HOURS	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
I 8-9	2. Arch. History. 4. Algebra. 3. Latin. 2. Pharmacy. 2. Mech. Engineering. 1. and 2. Drawing. 1. Elec. Engineering. 1. Botany. 1. German. 1. Bacteriology. 1. An. Chem. (Mining)	2. Graphics. 4. Geometry. 3. Agriculture (2, 3). 3. An. Industry (1). 3. Latin. 2. Mineralogy. 2. German. 2. Botany. 1. and 2. Drawing. 1. Elec. Engineering. 2. Machine Design.	2. Graphics. 4. Algebra. 3. Latin. 2. Pharmacy. 2. Vet. Science. 2. Mech. Engineering. 1. Botany. 1. and 2. Drawing. 1. Elec. Engineering. 1. German. 1. Dairy Farming (2).	4. Geometry. 3. Latin. 3. Chemistry. 2. German. 2. Botany. 2. Mech. Engineering. 2. Mineralogy. 1 and 2. Drawing. 1. Elec. Engineering.	2. Theory of Arch. 4. Algebra. 3. Latin. 2. Pharmacy. 2. Veterinary Science. 1. and 2. Drawing. 1. Elec. Engineering. 1. German. 2. Machine Design.	Exercises in Elo 1. Farm Machinery (1). 1. Soils (2-3).
II. 9-10	4. English. 3. Chemistry. 2. Civil Engineering. 2. Elec. Engineering. 2. Min. Engineering. 2. Latin. 1. Calculus. 1. Botany Lab'y. 1. Bacteriology. 1. An. Industry Lab'y.	4. History. 3. Physiology. 3. Descriptive Geometry. 2. Civil Engineering. 2. Elec. Engineering. 1. Mech. Engineering. 2. Min. Engineering. 2. Botanical Lab'y. 1. Botany. 1. French. 1. Agriculture. 2. Mach. Design (M.E.). 1. Metallurgy.	4. English. 3. Chemistry. 2. Civil Engineering. 2. Elec. Engineering. 2. Min. Engineering. 2. Latin. 2. An. Industry (3). 2. Horticulture (1-2). 1. Calculus. 1. Pharmacognosy. 1. Botany Lab'y.	4. History. 3. An. Industry (1). 3. Agriculture (2-3). 2. Civil Engineering. 2. Botany. 2. Elec. Engineering. 1. Mech. Engineering. 2. Min. Engineering. 4. Botany. 1. French. 1. Veterinary Sci. 1. Machine Design. 1. Metallurgy. 2. Arch. History.	4. English. 3. Chemistry. 2. Civil Engineering. 2. Latin. 2. Machine Design. 2. Min. Engineering. 2. Horticulture (1-2). 2. An. Industry (3). 1. Calculus. 1. Veterinary Sci.	Military Drill. 1. Farm Machinery (1). 1. Soils (2-3). 1. Arch. Drawing 2. Arch. Drawing 1. Machine Desig 1. Eng. Chemistry
III. 10-11	4. Agriculture (3). 3. English. 2. Physics. 1. Civil Engineering. 1. Botany Lab'y. 1. Latin. 1. Bacteriology. 1. An. Industry Lab'y. 1. Arch. Eng'n.	2. Specifications and Bldg. Materials. 4. English. 3. Botany (3). 3. History. 3. Ele. Mechanics (3). 2. Agricultural Chem. 2. French. 2. Machine Design. 1. Telephone Eng'n. 1. Horticulture. 1. Elec. Engineering. (Min. and Mech.) 1. Animal Industry. 1. Pharmacognosy. 1. Civil Engineering. 1. Botany.	4. Agriculture (3). 3. English. 2. Physics. 1. Latin. 1. Civil Engineering. 1. Botany (Lab'y.) 1. Engin. Contracts. 1. Entomology (1, 3). 1. Forestry (2). 1. Arch. Eng'n.	2. Spec. and Building Materials. 4. English. 3. History. 3. Botany. (3). 3. Ele. Mechanics (3). 2. Agri. Chemistry. 2. French. 2. Prac. Machinery. 1. Telephone Eng'r. 1. Horticulture. 1. Civil Engineering. 1. Elec. Engineering. (Min. and Mech.) 1. Animal Industry. 1. Pharmacognosy. 1. Botany.	4. History (3). 3. English. 2. Physics. 1. Civil Engineering. 1. Pharmacognosy. 1. Horticulture. 1. Arch. Engineering.	Mechanic Arts. Chemical Labora Elec. Laboratory. Physical Laborat Veterinary Clini Field, Civil and ing Engineer 1. Farm Machiner 1. Soils (2-3). 3. Surveying (3). 1 and 2. Arch. Dra 1. Machine Desig
IV. 11-12	3. Arch. Drawing. 4. Agriculture (3). 4. Physics (1-2). 4. Mechanic Arts. 4. Latin (1-2). 3. Drawing. 2. Mathematics. 2. Chemistry. (Ind.). 2. Pharmacognosy. 1. English (1-2). 1. Pol. Econ. (2-3). 2. Chemistry (Org.). 2. Chem. (Agr.) (2-3). 1. Botany.	3. Arch. Drawing. 4. Latin. 3. Drawing. 2. Agriculture (1, 3). 2. An. Industry (2). 2. Mathematics. 2. Chemistry (Org.) 2. Pharmacognosy. 1. Physics. 1. Bacteriology. 1. Mental Science. 1. Farm Machin. (1). 1. Soils (2, 3).	2. Chem. Agr. (2-3). 2. Chem. Org. (2). 4. Physics (1-2). 4. Latin (3). 4. Mechanic Arts. 4. Agriculture (3). 3. History. 3. Botany (3). 3. Ele. Mechanics (3). 2. Mathematics. 2. Chemistry (Ind.) 2. Pharmacognosy. 1. English (1-2.) 1. Pol. Econ. (2-3). 1. Botany.	4. Latin. 3. Physiology. 2. Mathematics. 2. Agriculture 1, 3). 2. An. Industry (2). 2. Chemistry (Org.). 1. Physics. 1. Bacteriology. 1. Mental Science. 1. Farm Machinery (1). 1. Soils (2-3). 3. Descript. Geometry.	3. Arch. Drawing. 4. Physics (1-2). 4. Mechanic Arts. 4. Latin (1-2). 3. Drawing. 2. Mathematics. 2. Chemistry (Ind.). 2. Pharmacognosy. 1. Military Science. 2. Chem. Agr. (2-3).	1. Pharmaceutical Lab'y. 3. Mechanic Arts. Chemical Laborat Electrical Lab'y. Physical Laborato Veterinary Clinic Field Work, Civil Mining Engin ing. 1. Machine Design 1. and 2. Arch. I
V. 12-1	1. Arch. Drawing. 4. Drawing. 4. Mechanic Arts. 3. Mathematics. 2. English. 1. Mech. Engineering. 1. Agriculture. 1. French. 1. Pharmacy. 1. Min. Engineering. 1. Botany. 1. Theoret. Chemistry.	2. Arch. History. 3. Mathematics. 2. English. 1. Geology. 1. Pharmacy. 1. Mech. Engineering. 3. Surveying (3). 1. Entomology (1, 3). 1. Forestry (2).	4. Drawing. 4. Mechanic Arts. 3. Mathematics. 2. German. 2. Anal. Chemistry. 1. Pharmacy. 1. Min. Engineering. 1. Arch Drawing. 1. Mech. Engineering.	3. Mathematics. 2. English. 1. Geology. 1. Pharmacy. 2. Mech. Engineering. 2. Graphics.	4. Drawing. 4. Mechanic Arts. 3. Mathematics. 2. Military Tactics. 1. Pharmacy. 1. Mining Engineering. 1. Theoret. Chem. 1. Dairy Farming (2). 1. Botany. 1. Arch. Drawing. 1. Mech. Engineering.	3. Mechanic Arts. 4. Mechanic Arts. Chemical Laborat Electrical Lab'y. Physical Laborato Veterinary Clinics Field Work, Civil Mining Engin ing.
P. M. 1-6	1 and 2. Arch. Drawing. 4. Mechanic Arts. 3. Mechanic Arts. 3. Physical Lab'y. 3. Descriptive Geom. 3. Field Work, Agr. 3. Botanical Lab'y. (3). 1. and 2. Field Work, Engineering. 1, 2, and 3. Chem. Lab. 1. and 2. Mach. Work. 1 and 2. Elec. Lab'y. 1. Mech. Lab'y. 2. Hort. Lab'y. (1-2). 1. Entomology (1, 3). 1. Forestry (2). 1. Botany.	4. Mechanic Arts. 3. Mechanic Arts. 3. Descript. Geom. 1-2. Arch. Drawing. 3. An. Ind. Lab. (1-2). 2. Mineralogical Lab. 2. Agriculture (1, 3). 1 and 2. History. Elec. Lab. Work. Military Drill.* 1. An. Ind'y. Lab'y. (2) 1. Hort. Lab'y. 1. Botany.	3. Mechanic Arts. 4. Mechanic Arts. 3. Physical Lab'y. 3. Descript. Geom. 3. Field Work, Agri. 3. Botanical Lab. (3). 3. Exercises in Elocution. 1, 2, and 3. Chem. Lab. 1 and 2, Field Work, Engineering. 1 and 2, Mach. Work. 1. Mch. Laboratory. Elec. Lab. Work. 1. Botany. 1-2. Arch. Drawing. 2. An. Ind. Lab. (2). 1. An. Ind. Lab.	1. Spec. and Bldg. Materials. 4. Mechanic Arts. 3. Mechanic Arts. 3. Descript. Geom. 3. Agri. Lab. (2-3). 1. Agriculture. 2. Mineralogical Lab'y. 3. An. Ind'y. Lab'y. (1). 2. Elec. Lab. Work. 2. Horticulture Lab. 1. and 2. History. 1. Telephone Lab'y. Military Drill* 1. Agriculture. 1. Botany.	4. Mechanic Arts. 3. Mechanic Arts. 3. Physical Lab'y. 3. Exercises in Elocution. 2. French. 2. Botanical Lab'y. 1, 2, and 3. Chem. Lab. 1. and 2. Field Work Engineering. 1. and 2. Mach. Work. 1. Mech. Lab'y. Elec. Lab. Work. 1. Horticulture Lab'y. 2. Graphic Statics (2). 1. Machine Design. 1. Mech. Lab'y. 2. Arch. Drawing.	

Chapel services daily at 7:45 a. m. *From 4:30 to 5:30 p. m.

Numbers prefixed denote classes—1 denotes senior; 2, junior, etc. Numbers affixed—(1), (2), (3), denote terms

DEPARTMENTS OF INSTRUCTION

ENGLISH AND POLITICAL ECONOMY.

PRESIDENT THACH.

PROFESSOR WIATT.

ADJUNCT PROFESSOR WEBB.

INSTRUCTOR RUTLAND.

INSTRUCTOR HERNDON.

OBJECTS AND METHODS.

In this department the students pursue a systematic course in the English language and literature.

Language is the avenue of approach to all knowledge; the interpretation of words is the fundamental process in education of whatsoever kind. A full course in English is, therefore, considered especially important in the technical courses of study that do not include the ancient classics. Accordingly, the course in English is continued throughout the four years of the college curriculum, three hours a week, and is made obligatory upon all students, with the exception of those pursuing the first two years of the course in Latin. In this extended drill in the grammar and literature of the English language, the endeavor is made to afford a training somewhat equivalent to the ordinary course in the classical languages.

In view of the ill preparation in languages, especially in their mother tongue, exhibited by many of the candidates for admission to the freshman class, it is deemed advisable, for the sake of honest work, to devote a portion of the first year to grounding such students in the principles of grammar.

Especial attention is given to the study of the writings themselves of leading American and British authors, since direct contact with literature is considered more profitable than information merely *about* literature.

All students before classed as regular in any course leading to a degree must conform to all the requirements in English for admission as set forth on page 51.

For requirements as to thesis and as to proficiency in English for certificates and degrees, see pages 60 and 140.

Declamations and themes (or orations) are required of *all regular* students. For details see below.

COURSES OF STUDY.

Freshman Class—Five hours a week; study of grammar, the principles of special and general composition, with frequent brief papers illustrating the laws studied; study of American authors; Irving, Hawthorne, Holmes, Poe, Bryant, Longfellow.

Bartlett and McBain's English Grammar, Gardiner and Kittredge's Rhetoric, Anderson's Study of English Words.

Sophomore Class—Three hours a week; study of style, analysis of selections of prose and poetry; frequent essays on historic and literary themes.

Advanced Rhetoric, English Prose, Syle's From Milton to Tennyson, Halleck's History of English Literature.

Junior Class—Three hours a week; lectures on the history of English literature, critical study of English classics, essays.

History of English Literature; Standard English Poems, Macaulay, Carlyle, DeQuincey, etc.

Senior Class—Two hours a week, first term. Principles of Criticism, Shakespeare's Julius Cæsar, Hamlet, etc. Dowden's Shakespeare, etc.

THEMES AND ORATIONS.

Theory without practice is as fruitless in the study of English as in any other department of study. Practical work is indispensable to the successful teaching of English.

Besides numerous brief papers illustrative of the subject matter of the text-books, set themes or orations are *required of all students*: For the freshman class *ten* themes a year; for the sophomore *ten;* for the senior and junior classes, *three* themes or orations each.

DECLAMATION.

The old practice of committing pieces to memory for "speaking" is cultivated as a means, both of training in the art of thinking on the feet, and of storing the mind with the diction of finished specimens of English style.

The sophomore class is heard weekly throughout the year in sections of ten, twice for an hour and a half in rehearsal, afterwards in the study-hall before the body of students.

The senior and junior classes also deliver their orations in public.

PHILOSOPHY AND POLITICAL ECONOMY.

The senior class pursue the study of intellectual science, twice a week through the year, and political economy twice a week, during the last two terms. The instruction in this department is by lectures in combination with textbooks.

Intellectual Science—Psychology defined. Value in relation to moral culture, education, and natural sciences. The relation of the soul to matter. The arguments of the materialist. Counter arguments. The faculties of the soul. The nature of consciousness. Sense Perception. Fancy. Imagination. Nature of conceptions. Language. Judgment. Reasoning. Deduction. Induction, etc. *Porter's Intellectual Science.*

Political Economy—Value; production of wealth; land; labor; capital; division of labor; distribution of wealth; wages; trades-union; tariff; education, etc. *Lectures by Professor. Ely's Outlines of Economics.*

A postgraduate course has also been established in English. The following courses have been given:

(1) *Shakespeare*—Hamlet, Othello, Macbeth, Merchant of Venice, As You Like It, Henry IV., Part I., Richard III., King John.

(2) *Dryden—Poetical Works* (Christie); Essay on Dramatic *Poesy* (Thomas Arnold); *Essay on Satire, etc.,* (Yonge); Saintsbury's *Life of Dryden.*

Pope—Poetical Works (Ward); Satires (Pattison); Stephen's *Life of Pope;* Gosse's *From Shakespeare to Pope* and 18*th Century Literature.*

(3) *English Literature of the Eighteenth Century;* Addison, Pope, Gray, Goldsmith, Burns, Cowper, Burke.

(4) *American Literature*: Longfellow, Lowell, Poe.

(5) *The Rise and Development of the English Essay*: Bacon, Addison, Steele, Swift, Johnson, Goldsmith, Macaulay, DeQuincey, Lamb, Carlyle.

(6) *Milton—Poetical Works* (Masson); Life, Pattison, Brooks.

(7) *Elizabethan Drama*: Green, Jonson, Marlowe, Webster, Beaumont and Fletcher.

(8) *Jacobean and Caroline Literature*: Browne, Herrick, Burton, Bunyan, Cowley, Vaughan, etc.

MATHEMATICS.

PROFESSOR CRENSHAW.

ASSOCIATE PROFESSOR WILSON.

ASSISTANT PROFESSOR PATRICK.

INSTRUCTOR STOKES.

INSTRUCTOR SHI.

The subjects taught in the different classes in this department are as follows:

FRESHMAN CLASS. Algebra to logarithms, geometry (completed), original solution of exercises.

SOPHOMORE CLASS. Advanced algebra, plane trigonometry, triangulation, surveying, mensuration.

JUNIOR CLASS. Analytic geometry, differential calculus.

SENIOR CLASS. Differential and integral calculus.

Two objects are sought to be obtained: First, mental discipline; second, a thorough knowledge of the principles of pure mathematics and their practical applications.

Theoretical and practical instruction is given to the sophomore class in land surveying, mapping, plotting, and computing areas, etc., also in the theory, adjustment, and use of instruments, and triangulation.

The class, in sections of six or eight, devote three afternoons a week during the second and third terms to field practice.

The completion of this course, common to all students, lays the foundation for the pure and applied mathematics of the mechanical and engineering courses. Analytic geometry and calculus are pursued in the engineering courses. Especial attention is given to their practical applications.

During the entire course, instruction in text-books is supplemented by lectures. Solutions of original practical problems are required of the student, to make him familiar with the application of principles and formulas.

TEXT-BOOKS.

Wentworth's Geometry, Wentworth's Algebra, Fine's Algebra, Wentworth's Trigonometry and Surveying, Tanner & Allen's Analytic Geometry, Granville's Calculus, Johnson's Differential Equations, Osborne's Problems.

HISTORY AND LATIN.

PROFESSOR PETRIE.

INSTRUCTOR HERNDON.

ASSISTANT WILLIAMS.

HISTORY.

In this department the aim is not so much to memorize facts as to understand them. Strong emphasis is laid on the fact that history is not a succession of isolated facts, but a progressive whole, each event being at once the cause and the effect of other events. The students are taught to investigate the growth of ideas and institutions, the rise and progress of great historical movements, and the reciprocal influences of men and circumstances. Frequent use is made of diagrams, photographs, charts, and maps, with which the department is well equipped. Instruction is given by text-books, lectures, and class discussion, but a constant effort is made to stimulate to wider reading and research in the library.

In the *freshman class* the history of the United States and of Alabama is studied. The course consists of lectures and text-book work, and is somewhat advanced. All students who take it must have previously completed some school text-book on the history of the United States.

Text-book: Elson's History of the United States.

In the *sophomore class* three courses are given:

1. A course in the history of Modern Europe, twice a week for two terms. All members of the sophomore class are required to take this. Some previous knowledge of the subject is desirable, but not necessary.

Text-book: West's History of Modern Europe.

2. A course in Ancient History, once a week for two terms. All students of the sophomore class are required to take this except those who have studied the subject and can pass an examination on it.

Text-book: Myers' General History, Part I.

3. A brief course in English History, three times a week during the third term. This course is not required of any students, but those who expect to take the General Course may substitute it for Botany or Mechanics.

Text-book: Montgomery's History of England.

HISTORICAL LABORATORY.

In the *junior and senior classes* opportunity for advanced work in United States History is given to those students of the General Course who elect it as laboratory work, and to any others who are properly qualified.

The chief object kept in view is training in historical research and in the formation of independent but careful opinions based on the original sources of information, as well as on the standard authorities. Emphasis is laid on the importance of securing proper material for investigation, and every incentive is given to the collection and use of new documents, papers, and letters illustrative of Southern, and especially of Alabama history. The method of work is as follows: Informal lectures are given on important and suggestive points, as: The cause of the Revolution; the Constitutional Convention; the War of 1812; the Missouri Compromise; the Monroe Doctrine; Texas and Mexico; the Compromise of 1850; the Kansas Struggle; the Dred Scott Decision; Secession. After each lecture a general discussion follows and topics connected with it are assigned to the students with an outline of the points to be investigated. Documents and other sources of information are consulted. The final results are collected by each student according to his own judgment in his note-book, which is then passed in to the professor for correction and suggestion.

Text-book: MacDonald's Select Statutes.

GRADUATE COURSE.

Graduate students are expected to take part in the junior and senior discussions, and will also meet with the professor for conference about their work. Each year some special field is taken for investigation and discussion. During the session 1908-9 the topic will be the Reconstruction Period. Those who take history as their major study are expected to devote a large part of their time to research upon some topic upon which they can consult the original sources of information.

Special books of reference: Fleming's Documentary History of Reconstruction, Hamilton's History of Reconstruction, Burgess' Reconstruction and the Constitution, Rhodes' History of the United States.

LATIN.

The objects kept in view in this department are: An accurate knowledge of the forms and syntax; a familiarity with Latin words, their etymology and their English derivatives; an appreciation of Latin literature and an intelligent conception of Roman history and civilization both in themselves and in their effect on the modern world.

A systematic course of instruction is given in the forms and syntax. These are taught both deductively from a grammar and inductively from the text read. Translation is constantly practiced, sometimes at sight, sometimes after being assigned for preparation. English passages based on a familiar author or illustrative of special constructions are put in Latin, both orally and in writing. Great emphasis is laid on the etymology of the words in the text read.

In connection with every author studied in class a course of reading in English is prescribed descriptive of his life, work, and times. The historical setting and the literary value of his writings are carefully discussed and frequent comparisons are made with modern authors.

In the freshman and sophomore classes the study of the language is the chief point. In the higher classes a broader view is taken. The junior class makes a special study of Roman history and Roman historians. The senior class studies Roman poetry and Roman life.

In the senior class a brief pedagogical course is given during the third term for those who expect to be teachers of Latin. This includes work on the forms and syntax, and in Cæsar and Virgil.

TEXT-BOOKS.

Freshman Class—Allen & Greenough's Grammar, Exercises, Nepos, Sallust, or equivalent.

Sophomore Class—Cicero, Allen & Greenough's Grammar, Bennett's Latin Composition.

Junior Class—Livy, Tacitus, Allen & Greenough's Grammar, Exercises, Botsford's History of Rome.

Senior Class—Horace, Latin Literature, Allen & Greenough's Latin Grammar.

MODERN LANGUAGES.

PROFESSOR WIATT.

The chief aim in this department is to give the student a thorough and accurate knowledge of the elementary principles of the subjects taught, and to enable him to read with facility the ordinary French and German at sight. To train the ear, acquire a correct pronunciation and some facility in speaking, all recitations are supplemented, as far as practicable, by oral exercises in the languages themselves.

The following regular courses are given in French and German:

French—First Year: Three recitations a week. During this year the principal object is to acquire a knowledge of the elements of grammar and a correct pronunciation, together with a facility in translating ordinary French. Reading is begun at an early stage, and the principles of grammar are illustrated and impressed by frequent exercises in rendering English into French.

Second Year: Three recitations a week. During this year almost the same line of work is pursued as that begun the previous year. More difficult and varied French is read, and instruction is given upon the laws of grammar, the construction of the language, and the history of the literature. Special attention is given to sight translation.

German—Two Years: Three recitations a week the first year, three a week the second year. In this course the aim and the methods are similar to those in French.

The students in this department will meet the professor twice a week, from 4 to 5 p. m., during the *first term* and the *third term,* for exercises in conversation in French and German.

TEXT-BOOKS.

FRENCH—*First Year*: Edgren's Grammar and Locard's Supplementary Exercises. Super's Reader.

Second Year: Corneille, Racine, Moliere, selected modern French plays, Duval's Histoire de la Litterature Francaise, Fraser and Squair's French Grammar, French Composition.

GERMAN—*First Year*: Joynes-Meissner's Grammar, Huss's German Reader.

Second Year: Schiller, Lessing, selected modern German plays, German Lyrics, Bernhardt's Deutsche Litteraturgeschichte, Whitney's German Grammar, Harris's German Composition.

GRADUATE COURSE.

This course is offered for the benefit of those students who wish to pursue the study of those subjects beyond the scope to which a two-year course necessarily limits them. Here, in addition to the authors studied in the lecture room, a wide and extensive reading of authors and literature is prescribed.

PHYSICS.

PROFESSOR SOUTHALL.

ASSISTANT KILLEBREW.

The complete course of physics extends over four years, and is designed to give, as far as possible, an adequate and correct idea of the methods of physical science and to lay the foundation for subsequent more advanced work if (as must often be the case, especially in an institution such as this) the student desires to pursue the subject further or intends to engage in any of the great engineering professions of which physics is so important a basis. The lectures are illustrated by experiments; the students are required to work numerous problems and exercises.

FRESHMAN COURSE.

This course is very elementary, and continues only during the first and second terms. The object in view is to make the student familiar with the fundamental principles of physics. The class meets three times a week. (The textbook will be announced later.)

SOPHOMORE COURSE.

This is a laboratory course, and deemed especially important for students of engineering, and of great advantage to such as intend to pursue the subsequent higher work in this department. The laboratory exercises are carefully selected, being designed to illustrate the fundamental methods and principles of physics, and, although the work is necessarily more or less elementary, at the same time such accuracy and precision as the conditions admit of are insisted upon, so that the student is expected to acquire a fairly correct idea of modern experimental investigation. The exercises consist of the fundamental measurements of length, mass, density, moduluses of elasticity, pendulum experiments, etc., together with a few more advanced experiments in connection with the similar properties of liquids and gases, and the general phenomena of heat and sound. The student is required to write a careful report of such experiments, entering the results of observation in tabular form, and plotting a curve wherever practicable; also describing the object, apparatus, and method, and noting sources of errors, etc. Great stress is laid upon this requirement, and reports are not accepted unless they indicate that the student has done his best in every way. Four hours per week throughout entire year. (Text-book will be announced later.)

JUNIOR COURSE.

Lectures and recitations three hours a week throughout the entire session. This is a more advanced course in general physics required of all candidates for a degree. The only preparation needed is a good working knowledge of mathematics through plane trigonometry. The course includes a series of illustrated lectures on the principles of dynamics, as applied to solids, liquids, gases, sound, and heat, in the order named. Written exercises are required each week. (Text-book to be announced later.)

SENIOR COURSE.

Lectures and recitations two hours a week throughout the entire session. This course, although more advanced than the junior course, and occasionally employing the higher mathematics, is a continuation of the work of the previous year. It might be called a course in elementary mathematical physics, and the subjects varying from year to year, that are treated in the lectures are such branches of physics as kinematics and dynamics, thermodynamics, electricity and magnetism, geometrical and physical optics, etc. The student is encouraged to solve difficulties for himself, and to read the standard treatises and original memoirs on the various topics that come under discussion.

The last term of the session will generally be devoted to a brief course of lectures in descriptive astronomy.

The text-books in this class vary with the changing subjects and will be announced by the professor each year.

GRADUATE COURSE.

This course will be designed to meet the needs of the students who take it. It will include both theoretical and experimental work in more advanced mathematical physics, or in analytical mechanics.

CHEMISTRY.

PROFESSOR ROSS.

ASSOCIATE PROFESSOR HARE.

ASSISTANT PROFESSOR RANSOM.

INSTRUCTOR BRAGG.

ASSISTANT THORNTON.

Instruction in this department embraces:

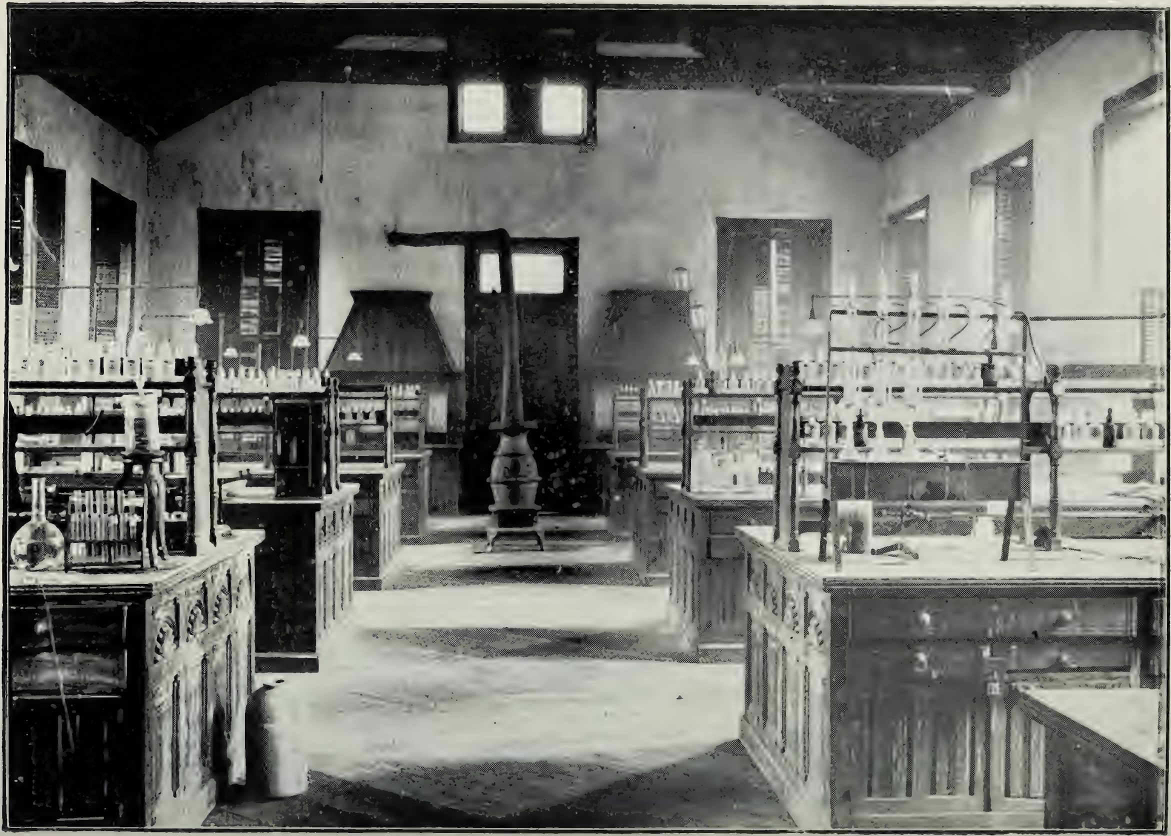
1. A course of lectures in general chemistry.
2. A course of lectures in industrial and engineering chemistry.
3. A course of lectures in organic chemistry.
4. A course of lectures in metallurgy.
5. A course of lectures in agricultural chemistry.
6. A course of lectures in theoretical chemistry.
7. A course of lectures in physical chemistry.
8. Systematic laboratory work in connection with each course of lectures, for the practice of chemical analysis and chemical research.

1. Course in general chemistry: This consists of a series of lectures (three per week) extending throughout the entire session, and includes a discussion of the fundamental principles of chemical philosophy in connection with the history, preparation, properties, and compounds of the metallic and non-metallic elements, with the main facts and principles of organic chemistry. In this course the more common applications of chemistry to the arts and manufactures are discussed. The apparatus used for experimental illustration is extensive, containing the newest and approved improvements necessary for presenting the subject in the most attractive and instructive form.

REFERENCE BOOKS.

Remsen's College Chemistry, Newth, Holleman, Roscoe & Schorlemmer, Chemical Journals.

2. Lectures in industrial chemistry (four per week) extend throughout the session, and include a discussion in



INTERIOR CHEMICAL LABORATORY

detail of the process and chemical principles involved in the most important applications of chemistry in the arts and manufactures to the preparation of materials for food and drink, for clothing, shelter, illumination, cleansing, purifying, writing, printing, etc.

These lectures are amply illustrated by means of suitable specimens of raw materials and manufactured products, together with models and diagrams.

A course of lectures (one hour per week) on engineering chemistry is given during the senior year, especial attention being given to the study of the construction and equipment of chemical plants devoted to the manufacture of the more important chemical products. The study of textile chemistry will also be included in this series of lectures.

Excursions to various chemical and metallurgical plants during the course of the year will aid in familiarizing the student with the practical details of the operation of the leading industries.

REFERENCE BOOKS.

Thorp's Industrial Chemistry, Wagner's Chemical Technology; Muspratt's Chemistry as applied to Arts and Manufacturing, Ure's Dictionary, Watt's Dictionary, Sadtler's Industrial Organic Chemistry, Blount & Bloxam's Chemistry for Engineers and Manufacturers.

3. Courses in organic chemistry: Instruction in this subject embraces lectures and recitations (two hours per week) throughout the junior year, upon the leading facts and principles of the chemistry of the carbon compounds, and includes a study of the methods of preparation of the more important compounds, their properties, and their structural and stereo-chemical relations.

A special short course of two hours per week throughout the first term of the junior year is offered to students in the agricultural courses.

TEXT AND REFERENCE BOOKS.

Remsen's Organic Chemistry, Richter's Organic Chemistry, Gatterman's Practical Methods of Organic Chemistry.

4. Course in metallurgy: This consists of lectures and recitations (two per week, during the senior year) upon the more important metals, such as iron and steel, copper, lead, tin, silver, gold, mercury, zinc, etc. It includes a discussion of the physical and chemical properties of the metals and their alloys, the ores and their treatment, and the processes by which the metals are obtained from the ores, with chemical reactions involved.

5. Course in agricultural chemistry: This consists of lectures on chemistry in its application to agriculture (three per week, during second and third terms), and includes a thorough discussion of the origin, composition, and classification of soils, the composition and growth of plants, the sources of plant food and how obtained, the improvement of soils, the manufacture and use of fertilizers, the chemical principles involved in the rotation of crops, the feeding of live stock, and the various operations carried on by the intelligent and successful agriculturist.

REFERENCE BOOKS.

Snyder's Soils and Fertilizers, Snyder's Chemistry of Plant and Animal Life, Johnson's How Crops Grow, and How Crops Feed, Lupton's Elementary Principles of Scientific Agriculture, Johnson and Cameron's Elements of Agricultural Chemistry, Storer's Agriculture in Relation to Chemistry, scientific journals, reports of the United States Department of Agriculture, and the bulletins and reports of the various home and foreign agricultural departments and stations.

6. Course in theoretical chemistry. Two lectures per week in this subject will be given throughout the senior year, especial attention being given to the more modern phases of chemical theory.

7. Course in physical chemistry: Two hours per week during the senior year.

8. The course of systematic laboratory work: This course of practical work in the laboratory is carried on in connection with each course of lectures. In the junior year the work embraces the practical operations of chemical synthesis and analysis, and includes the preparation of non-

metallic elements and their most important compounds, in addition to a systematic study of the metals and their compounds, their separation and identification. In the senior year students pursue work in quantitative analysis, including analysis of fertilizers, soils, coals, ores, iron and steel, sugars and sugar products, feed stuffs, mineral waters, fluxes, slags, cinders, furnace gases, etc., the courses of work being varied somewhat to suit the individual object of the student.

In the course of pharmacy instruction in toxicology and toxical analysis is given during the last term of the senior year.

All students during the sophomore year are required to take two hours per week of practical laboratory work, instruction being given in the simplest methods of chemical manipulation. A portion of this time may be devoted to lectures and classwork in general chemistry.

The laboratories, which are open from 9 A. M. to 5 P. M., during six days in the week, are amply supplied with everything necessary for instruction in chemical manipulation in qualitative and quantitative analysis, and in the methods of prosecuting chemical research. Unusual facilities are offered to students who wish to devote their time to the special study of practical chemistry.

Each student on entering the chemical laboratory is furnished with a work table, a set of re-agent bottles and the common reagents and apparatus used in qualitative and quantitative analysis.

At the close of the session he will be credited with such articles as may be returned in good order; the value of those which have been injured or destroyed, will be deducted from his contingent fee.

In addition to the laboratory work above described it is designed to give a short course of laboratory work in industrial chemistry, in which the student will apply upon a small scale the principles involved in the processes of some of the more important chemical industries.

Advanced students are afforded ample facilities for work in organic preparations and organic analysis.

TEXT-BOOKS.

In qualitative analysis—Jones, Sellers, Fresenius, Plattner.

In quantitative analysis—Fresenius, Cairns, Sutton, Rose, Blair's Analysis of Iron and Steel, Rickett's Notes on Assaying, Mitchell's Manual of Practical Assaying, Stillman's Engineering Chemistry, Lord's Metallurgical Analysis.

In agricultural chemical analysis—Official methods of the Association of Agricultural Chemists, Wiley's Principles and Practice of Agricultural Analysis.

CHEMICAL LABORATORY.

(For description of building see page 21.)

The chemical apparatus recently purchased for the laboratory consists of a full supply of the most approved instruments for practical work and investigation. The building is supplied with water and gas and every appliance required to meet the demands of modern scientific instruction and research. In addition to the apparatus usually supplied to first-class laboratories, there have been imported a new and improved Schmidt and Hensch's polariscope, ten short-arm balances of latest pattern, Bunsen's spectroscope, Abbe refractometer, and other instruments for delicate and accurate work.

ELECTRICAL ENGINEERING.

PROFESSOR DUNSTAN.

ASSISTANT PROFESSOR HILL.

JUNIOR YEAR.

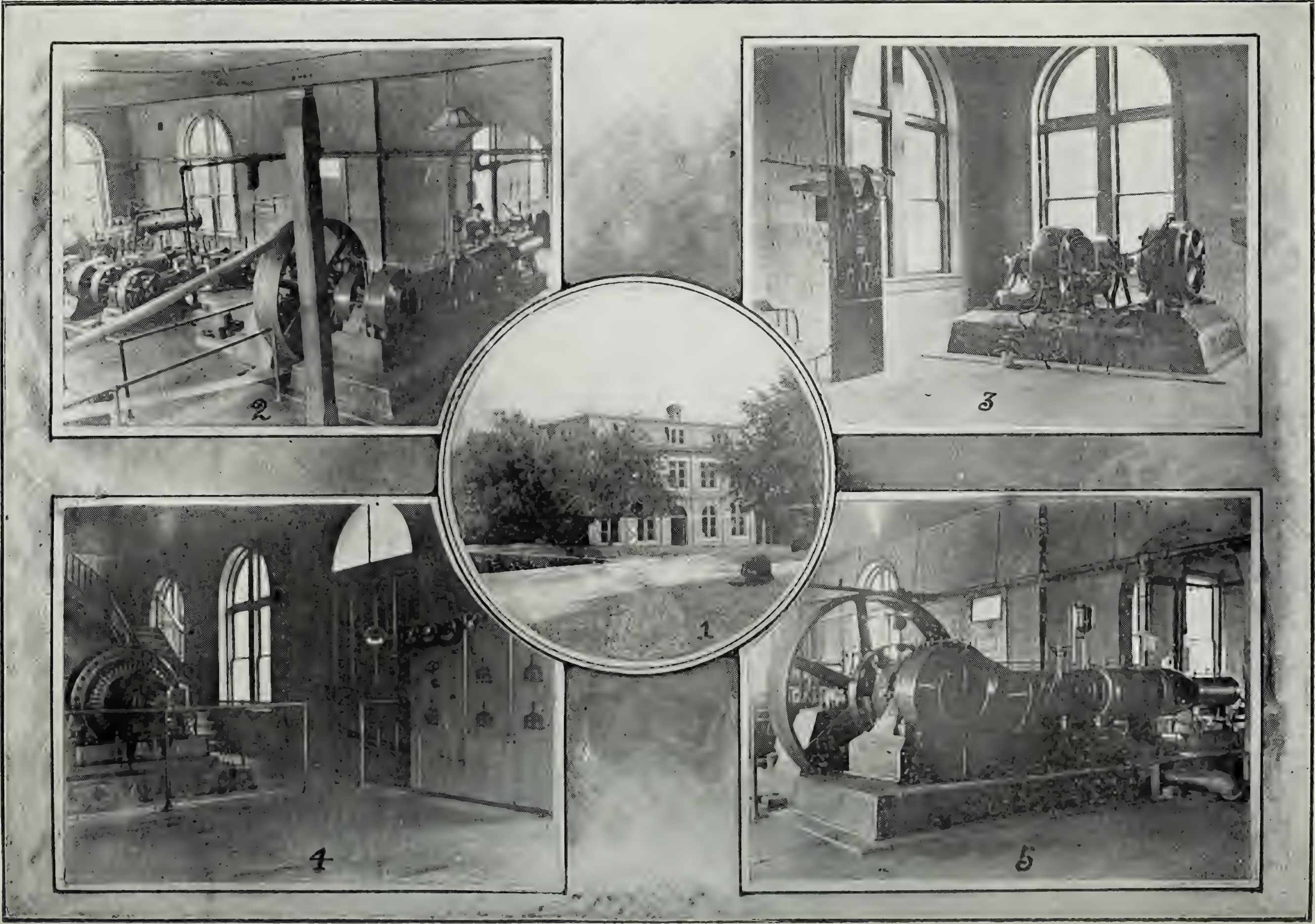
The instruction received by a student depends somewhat upon whether he is making a specialty of electrical or of mechanical engineering.

For electrical engineering students:

First Term—Four hours per week are devoted to the study of the principles of electricity and magnetism, with especial reference to their industrial applications. The subject of electrical measurements is also treated at some length.

Second Term—Direct Current Machinery, four hours per week.

Third Term—(a) A short course of lectures upon the design of small D. C. motors. Upon completion of the course students are required to submit a design with drawings of a motor to meet given specifications.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(b) Direct Current Power and Lighting Stations, Wiring, Insurance Rules, etc. Four hours per week.

For mechanical engineering students:

First Term—The work is the same as that for electrical engineering students.

Second Term—Incandescent Lighting, four hours per week.

Third Term—Arc Lighting and Wiring, four hours per week.

JUNIOR LABORATORY.

During the first term a considerable amount of experimental work in the measurement of resistances, currents, pressures, capacities, magnetic measurements, and the calibration of instruments is done. During the succeeding terms the wiring up and operation of dynamos and motors is given. A part of the course is devoted to "trouble shooting," the instructor purposely making grounds, short circuits, and open circuits either on machines or lines, the student being expected to detect, locate, and remedy the trouble. Following this a considerable amount of work in brake and stray power tests is given. Four hours per week.

SENIOR YEAR.

For electrical engineering students:

First Term—(a) A course of lectures upon the design of direct current generators. A design of a direct current generator to be submitted by students at end of the course.

(b) Theory of Alternating Currents, five hours per week.

Second Term—Alternating Current Machinery, five hours per week.

Third Term—Alternating Current Machinery, and Calculation of Power Transmission Circuits.

For mechanical engineering students:

First Term—Direct Current Machinery, two hours per week.

Second Term—Alternating Currents, two hours per week.

Third Term—Alternating Current Machinery, two hours per week.

LABORATORY WORK.

Four hours per week. Efficiency and regulation tests of transformers and alternators. Tests and operation of synchronous and induction motors, and rotary converters.

(b) Direct Current Power and Lighting Stations, Wiring, Insurance Rules, etc. Four hours per week.

For mechanical engineering students:

First Term—The work is the same as that for electrical engineering students.

Second Term—Incandescent Lighting, four hours per week.

Third Term—Arc Lighting and Wiring, four hours per week.

JUNIOR LABORATORY.

During the first term a considerable amount of experimental work in the measurement of resistances, currents, pressures, capacities, magnetic measurements, and the calibration of instruments is done. During the succeeding terms the wiring up and operation of dynamos and motors is given. A part of the course is devoted to "trouble shooting," the instructor purposely making grounds, short circuits, and open circuits either on machines or lines, the student being expected to detect, locate, and remedy the trouble. Following this a considerable amount of work in brake and stray power tests is given. Four hours per week.

SENIOR YEAR.

For electrical engineering students:

First Term—(a) A course of lectures upon the design of direct current generators. A design of a direct current generator to be submitted by students at end of the course.

(b) Theory of Alternating Currents, five hours per week.

Second Term—Alternating Current Machinery, five hours per week.

Third Term—Alternating Current Machinery, and Calculation of Power Transmission Circuits.

For mechanical engineering students:

First Term—Direct Current Machinery, two hours per week.

Second Term—Alternating Currents, two hours per week.

Third Term—Alternating Current Machinery, two hours per week.

LABORATORY WORK.

Four hours per week. Efficiency and regulation tests of transformers and alternators. Tests and operation of synchronous and induction motors, and rotary converters.

TELEPHONE ENGINEERING.

Two hours per week are devoted to a careful study of the principles and practice of telephony. This course is given to electrical engineering seniors, and is accompanied with suitable laboratory work, in addition to the class room work just mentioned.

APPLICATIONS OF ELECTRICITY TO MINING.

Two hours per week for two terms of the senior year, a course of recitations and lectures on electricity with especial reference to mining is given to students taking the mining engineering course.

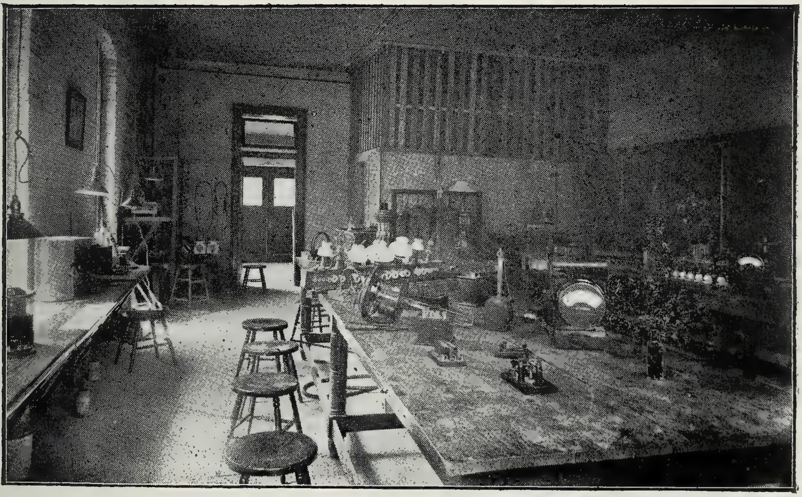
POSTGRADUATE COURSE.

To graduate students more advanced courses of instruction are given, these courses being varied from year to year to meet the needs of those taking them. During the present year a course has been given in alternating current machinery.

Encouragement is offered to advanced students for conducting original investigations and an opportunity is taken to stimulate a spirit of scientific enquiry. Courses of reading are suggested to such students in connection with their experimental work.

The rapid extension of the lighting and power service gives unusual opportunities for practical work in wiring and the installation of electrical machinery. Most of this work is done by students, and great benefit is derived by them from it.

TELEPHONE LABORATORY



ELECTRICAL LABORATORY

MECHANICAL ENGINEERING.

PROFESSOR WILMORE.

INSTRUCTOR STOKES.

INSTRUCTOR THOMAS.

INSTRUCTOR MITCHELL.

ASSISTANT HUGHES.

ASSISTANT HIXON.

The equipment of the shops and laboratories is listed and described on pages 9 and 21 of this catalogue. Additional facilities for instruction may be mentioned as follows: Suitable lecture and recitation rooms, one of which is fitted with a projection lantern and screen for showing enlarged illustrations of engineering appliances; a number of models of steam pumps, injectors, lubricators, valves, valve gears, steam engines, gasoline engines, and kinematic models.

During the past year large additions were made to the steam plant. A new chimney 105 feet high built of buff, radial brick, having a maximum capacity of five hundred horse power of boilers, has been erected. A Stirling water tube boiler of 200 horse power has been installed. Special provision was made in the setting of this boiler for its use as a piece of apparatus for testing. A new American Ball angle compound engine direct connected to an alternating current generator, has been installed. This engine has a capacity of 160 horse power, and offers students many interesting problems in connection with balancing and inertia effects. The nature of the work and the courses pursued are herewith set forth in detail.

FRESHMAN CLASS.

I. *Shop Work. Carpentry.*—Six hours per week for one term. Required of all members of the freshman class. The lessons include instruction in the nature and use of tools; instruction and practice in shop drawing; elementary work with the plane, saw, and chisel; the construction of different kinds of joints, timber splices, cross joints, mortise and tenon, mitre and frame work, and dove tail work, comprising the different joints used in cabinet work, and examples of framing roof trusses. Students who have had previous experience in the use of tools or who show special proficiency, are given work of an advanced character.

II. *Shop Work. Wood Turning.*—Six hours per week for one term. Required of all members of the freshman class. The instruction includes the nature and use of the lathe and the tools, and the lessons comprise plain, straight turning, caliper work to different diameter and lengths, simple and compound curves, screw plate and chuck work, hollow and spherical turning.

III. *Shop Work. Pattern Making.*—Six hours per week for one term. Required of all members of the freshman class. The course includes work in whole and split patterns in wood for solid and cored castings, and core boxes for producing the necessary cores. The characteristics of the different kinds of timber used for patterns are studied, and attention is called to allowances necessary for shrinkage and draft. The patterns are intended to be used by the students in their subsequent work in the foundry.

SOPHOMORE CLASS.

I. *Shop Work. Forging.*—Four hours per week for half the year. Required of all members of the sophomore class. A text book is used from which is learned something of the characteristics of the metals and the best methods of working them. The lessons are so arranged as to make the student familiar with the handling of the tools and the successive steps in working metals by hand. Exercises in drawing, upsetting and bending, cutting, punching, and welding by various methods, are given together with a course in steel forging, including hardening, tempering, and case hardening.

II. *Shop Work. Foundry.*—Four hours per week for half a year. Required of all sophomores except those taking agriculture. The work for the most part consists of small articles, such as light machine parts and the stock pieces used for the exercise work in the machine shop. A sufficient variety is introduced for the student to acquire a good general knowledge of the usual methods and appliances used in light foundry work. Most of the work is in green sand in two part flasks, but some core work and more complicated work is introduced to illustrate the processes, as well as to furnish the castings for the advanced work in the machine shop. Instruction is given in operating the cupola, and from time to time lectures and recitations are held on the metallurgy and working of the metals used in the industrial arts.

JUNIOR CLASS.

I. *Elementary Mechanics.*—Three hours per week during the second term. Required of all juniors in the courses of mechanical engineering, electrical engineering, architecture, and mining engineering. The fundamental laws of mechanical science are studied, while special attention is given to the practical applications of these principles to engineering work.

II. *Strength of Materials.*—Three hours per week during the third term. Required of all juniors in the courses of electrical engineering and mining engineering. The general properties and characteristics of cast iron, wrought iron, and steel are studied, and an elementary treatment of the strength of these materials in the form of beams, girders, columns, and shafts is given. The text book work is supplemented by lectures and many practical problems are worked out.

III. *Steam Boilers.*—Three hours per week during the third term. Required of all juniors in the course in mechanical engineering. The different types of boilers with the conditions under which each is most efficient, are discussed. A special study is made of combustion and the design of settings to secure good combustion, and attention is given to corrosion, wear and tear, and the prevention of scale.

IV. *Practical Mechanics.*—One hour per week during the year. Required of all juniors and special students who take machine shop work. The instruction consists of recitations and lectures on general machine shop work. The construction, use, and limitations of the various machine tools, the forms of cutting tools and methods of grinding them, and the form and use of jigs and gauges, are studied, together with instruction in machine management, and time and cost keeping.

V. *Shop Work.*—Six hours per week during the year. Required of all juniors in the courses of mechanical engineering and electrical engineering. This work is divided into two parts:

(a) A course of chipping and filing. The lessons comprise work on cast iron and wrought iron, and consist in chipping to line on flat and curved surfaces, key seating, filing and finishing to line, surface filing, slotting, pin and screw filing, and surface finishing with scraper.

(b) A course in machine work. The materials worked on include cast iron, wrought iron, steel, and brass. Exercises are given in turning to various diameters and lengths, taper turning, facing with chuck and face plate, drilling in the lathe and drill press, reaming, boring, screw cutting in lathe and with taps and dies. Practice is given in working the planer, shaper, and milling machine. In the last part of the year, some work in tool making is given, such as making taps, reamers, and milling cutters. Some sort of construction or repair work for the department is always on the shop floor, and students who are well advanced in their work have opportunity to gain additional practice and experience by assisting with this.

VI. *Shop Work.*—Four hours per week during the year. Required of juniors in the course of mining engineering and elective for juniors in the course of civil engineering. The work includes courses (a) and (b) as described in course V. just preceding, except the amount of work required is less in proportion to the time consumed.

All shop work is done from blue prints and blackboard sketches. For the preliminary exercise work, special instruction sheets are prepared and given out to each student with the stock for the exercises. These sheets explain in detail each step in the process of producing the exercise, and are intended to supplement the individual instruction of the instructor. In the construction work it is the purpose to select some simple machine and build two or more of them on the interchangeable system. Jigs and templates are built to accomplish this result as far as possible. A system of time keeping is in force in the shop. At the end of the week, each student makes out his time card, describing the work he has done during the week, and giving the number of hours spent on each job.

SENIOR CLASS.

I. *Power Plant Engineering.*—Five hours per week for the first term. Required of seniors in the courses of mechanical engineering and electrical engineering. The work of this course consists of a study of the practical applications of steam machinery. It is believed that a thorough knowledge of the apparatus in actual practical use is the best preparation a student can have for a study of the theory, and to that end, the different types of engines, boilers, pumps, condensers, and other auxiliary apparatus are taken up and studied in detail, and the advantages of each are discussed. Extensive files of manufacturers' catalogues are kept, and the technical papers and magazines in the library are freely used in order to keep in touch with the latest and best practice in engineering work.

II. *Thermodynamics.*—Five hours per week for the second and third terms. Required of seniors in the courses of mechanical engineering and electrical engineering. The subject is first studied from the ideal standpoint, and later the applications are made to hot air engines, gas and gasoline engines, and steam engines, and also to air compressors and refrigerating machines. The temperature-entropy method of analysis is used in explaining heat transfers, and in general, graphical methods are used in preference to analytical ones when they can be made to serve the purpose equally well. In this course will be given instruction in indicator practice and the interpretation and working up of indicator diagrams from steam engines, gas engines, air compressors, and refrigerating machines.

III. *Gas Engines.*—Two hours per week for the first term. Required of seniors in the course of mechanical engineering. This is a descriptive course and gives attention to the construction and operation of gas engines and gas producers as used in modern power plants. The rapid development of the gas engine in recent years warrants a more extended treatment of this subject than can be given in the usual course in thermodynamics, and the above is offered as supplementary thereto. The text book will be supplemented by lectures, student reports on current articles in technical publications, and by catalogues and drawings.

IV. *Heating and Ventilating.*—Two hours per week during the second term. Required of seniors in the course of mechanical engineering. The different methods of heating and ventilating buildings are treated. A study is made of the relative efficiency of hot water, steam, and warm air as mediums for heating different kinds of buildings, and special attention is given to the design and operation of healthful heating systems for residences.

V. *Mechanics of Materials.*—Three hours per week for the first term. Required of seniors in the course of mechanical engineering. The properties and characteristics of the materials of engineering construction are studied, and the development of the methods of calculating their strength under different conditions of stress is explained. Many problems involving the strength of beams, girders, columns, and shafts are worked out.

VI. *Materials of Machines.*—Three hours per week for the third term. Required of seniors in the course of mechanical engineering. Attention is given to the manufacture and uses of the materials which are employed in engineering construction. Special attention is given to the latest methods of manufacture of iron, steel, and cement, the work being presented by text book, lectures, lantern slides, and manufacturers' catalogues.

VII. *Laboratory.*—Four hours per week during the year. Required of seniors in the courses of mechanical engineering and electrcial engineering. The laboratory work is arranged as far as possible to bring the student into contact with engineering appliances under practical working conditions. Careful work and accurate and complete reports are insisted upon. The course includes the calibration of instruments, tests of engines, boilers, pumps, gasoline engines, the standard tests of the strength of materials, iron, steel, wood, and cement, and the analysis and determination of the heating value of coal, the analysis of chimney gases, and testing lubricants.

VIII. *Laboratory.*—Four hours per week for the second term. Required of seniors in the course of civil engineering. The course includes work in the testing of the materials of construction, cast iron, wrought iron, steel, and cement, under tension, compression, and transverse loads. Careful measurements are taken of the deformation of the specimens, and complete reports of the results are made by the students.

POSTGRADUATE WORK.

Considerable latitude is allowed in the selection of postgraduate work, and the course is arranged each year to suit the requirements of the class. One of the following lines of work is recommended: Hydraulics, thermodynamics, heating and ventilating, reinforced concrete construction, or power plant engineering.

Laboratory work suitable to the course selected is offered.

TEXT BOOKS.

Morley's Mechanics for Engineers, Merriman's Strength of Materials, Carpenter's Heating and Ventilating, Leonard's Machine Shop Practice, Spangler's Elements of Steam Engineering, Creighton's Steam Engine, Parson's Steam Boilers. The text books on Gas Engines, Mechanics of Materials, and Materials of Machines have not yet been selected.

CIVIL ENGINEERING.

PROFESSOR MITCHAM.

ASSISTANT WALKER.

The following courses are offered in this department:

1. SOPHOMORE.—*Theory of Surveying.*—For students in civil and mining engineering. Instruction in this subject will include a course of lectures on construction, use, adjustment, and care of instruments—determination of true meridian; farm surveys; government land survey system; azimuth traverse; repetition traverse; balancing survey; theory of stadia measurements; differential and profile levelling; theory of plane table survey; topographical surveys. Two lectures a week, and as much field work as students' schedule will permit. Third term.

2. Surveying between sophomore and junior years. For students in civil and mining engineering. This course will be given at the summer surveying camp, and will occu-

py four weeks immediately after commencement. Sixty hours a week. Time will be devoted to practical field work in surveying, embracing: pacing, chaining, ranging, adjustment of instruments, angle reading, farm surveying, running land lines, dividing land, azimuth traverse, repetition traverse, differential levelling, profile levelling, triangulation, topographical surveys with transit and stadia, topographical surveys with plane table, and by other methods. Daily lectures will be given to explain work to be done, and each day's work will be calculated and plotted.

3. Theory of Railroad Surveying. For students in civil and mining engineering. First term of junior year. Reconnaissance, preliminary surveys, railroad topography, location surveys, simple, reversed, and compound curves, transition curves, turnouts and crossings, construction surveys, cross sectioning, calculation of earthwork, culverts, trestles, minor structures, maps, profiles, and estimates. Lectures and recitations five hours a week, three hours field work, and three hours office work.

4. Roads and Pavements. For students in civil engineering. Second term, and first half of third term of junior year. Road economics, road location, earth roads, gravel roads, broken stone roads, miscellaneous roads, street pavements, pavement economics, street design, street drainage, curbs and gutters, pavement foundations, asphalt pavements, brick pavements, cobblestone pavements, stone block pavements, wood block pavements, comparison of pavements, sidewalks. Lectures and recitations five hours a week.

5. Graphic Statics. For students in civil engineering. Second term of junior year. Graphical resolution and composition of forces, force polygon, equilibrium polygon, determination of resultant of concurrent, non-concurrent, and parallel forces, determination of reactions and stresses in roof and bridge trusses, bending moments in beams and pins, moments of inertia. Lectures and exercises three hours a week.

6. Mechanics of Materials. For students in civil engineering. Last half of third term of junior year. General conditions of equilibrium, classification of stresses, tensile stress, compressive stresses, shearing and torsional stresses, flexure, beams fixed at ends and curves of mean fibre, continuous beams, horizontal shear, combined stresses, eccentric loading, live loads on beams, columns, rivets and pins, properties of materials of construction and methods of preservation. Lectures and recitations five hours a week.

7. Surveying between junior and senior years. For students in civil engineering. Four weeks in summer surveying camp, sixty hours a week. Complete surveys for a railroad about three miles in length, including setting all stakes ready for construction; surveys for development of water power; measurement of discharge of streams; surveys for locating, relocating, and otherwise improving public roads; other problems in higher surveying that the time may permit.

8. Theory of Bridge Analysis. For students in civil engineering. First half of first term of senior year. Solid-built beams and I-beams, plate girders, determination of deadload stresses in trusses, live-load stresses in trusses, types of trusses, steel arches, suspension bridges, draw-bridges, roof trusses, derricks, bridge erection. Lectures and recitations five hours a week.

9. Masonry Construction and Foundations. For students in civil engineering. Last half of first term of senior year. Masonry walls, masonry dams, retaining walls, masonry arches, natural building stones, artificial stone; cements, limes, mortars, concrete, foundations on land, foundations under water. Lectures and recitations five hours a week.

10. Hydraulics. For students in civil, mining, and mechanical engineering. Second term of senior year. Hydrostatics, theoretical hydraulics, instruments, flow through orifices, flow over wiers, flow through tubes, flow through pipes, flow in open channels and conduits, flow of rivers,

water supply and water power, water wheels, turbines, pumps and pumping. Lectures and recitations five hours a week.

11. Sanitary Engineering. For students in civil engineering. Third term of senior year. Sanitary science, water and its purification, water supply systems, sewerage systems, sewage disposal, disposal of garbage and refuse. Lectures and recitations five hours a week.

12. Structural Drafting. For students in civil engineering. Extends through entire junior year. This course is thoroughly practical, and is designed to acquaint the student with details of construction and with the practice of the principal bridge and structural companies in making shop drawings, to train him in neatness and accuracy of execution, and to prepare him for the course in structural design which he will take up in the senior year. Five hours a week in drafting room.

13. Structural Design. For students in civil engineering. Extends through the entire senior year. In this course the student devotes five hours a week to the practical design of engineering structures, completing designs for a plate girder railroad bridge, a steel highway bridge, a short span railway truss bridge, a roof truss, and such other designs as the time will permit. This work may be varied to a considerable extent in order to fit the needs or inclinations of individual students, especially when they choose a structural subject for thesis work.

14. Thesis. For students in civil engineering. Each candidate for a degree must select and announce the subject of his thesis not later than January 1st, and from that time till May 1st, when it must be completed and handed in, will devote six hours a week to the collection of data and the preparation of his thesis. The thesis may consist of an original design for some engineering work, as a bridge, water supply system, sewerage system, sewage disposal plant, surveys and estimates for a railroad two or three miles long, development of water power, or a written report showing methods and results of original investigation of some subject connected with engineering.

MINING ENGINEERING AND GEOLOGY.

PROFESSOR BROWN.

ASSISTANT LIPSCOMB.

GENERAL GEOLOGY.

Two hours per week during the entire session. Students in chemistry and metallurgy and in mining engineering take up this subject during the junior year. It is open to students in chemistry and agriculture, civil engineering, and the general course during their senior year. The course covers dynamical geology, structural geology, geomorphology, and historical geology in the order named. The lectures and recitations are supplemented by laboratory instruction and geological excursions.

Text-book: Scott's Introduction to Geology. (1907 revised edition.)

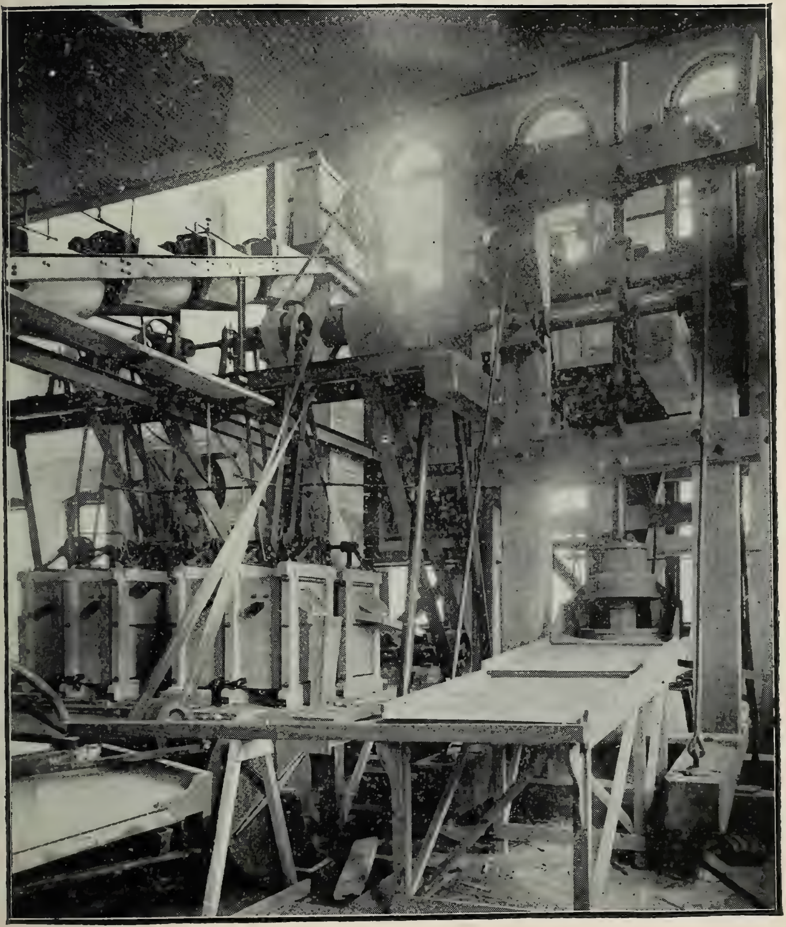
ECONOMIC GEOLOGY.

Students in the senior class in chemistry and metallurgy and in mining engineering devote two hours per week to lectures and recitations in this subject during the first and third terms. The course includes the study of modes of occurrence, distribution, origin and uses of coal, petroleum, natural gas, and other hydrocarbons, building stones, clays, limestones, salines, gypsum, fertilizers, abrasives, minor non-metallic minerals, mineral waters, ores of iron, copper, lead and zinc, gold and silver, silver-lead, aluminum, manganese, mercury, and the minor metals.

Text-book: Riess' Economic Geology of the United States.

MINERALOGY.

Students of the junior class in the courses of civil engineering, mining engineering, and chemistry and metallurgy devote four hours a week during the first semi-term to the study of crystallography, which comprises a thorough study of the crystal systems aided by a full set of crystal models and original crystals. Four hours a week, during the remainder of the session, are devoted to work in determinative mineralogy and lithology. This work includes



MINING ENGINEERING
ORE DRESSING LABORATORY

measurement of crystal angles and determination of system of crystallization, determining physical properties, blowpiping and the determination of a large number of unknown minerals. A good type collection of minerals is kept in the laboratory for comparison after determinations are made. An effort is made to have the student become familiar with economically important ores and non-metallic minerals and the common rock-forming minerals so that he can identify them by sight or by the application of a few simple tests.

Text and reference books: Moses and Parsons' Mineralogy. Crosby's Tables. Dana's Handbook of Rocks.

MINING ENGINEERING.

Junior Mining.—Five hours per week during the entire session. The special studies of this course begin with the first term in the junior year, and require a knowledge of algebra, geometry, and trigonometry. Special students who have not completed these subjects can not pursue this course satisfactorily. The course begins with higher surveying, the first series of lectures being on the theory, use, and care of the various instruments used by surveyors and engineers in surveying and mapping, and includes levelling, topographical surveying, railway surveying, mine surveying, and mapping. The work in surveying is especially designed to meet the needs of the engineer connected with mining enterprises and special attention is given to mine surveying. Field work is given in connection with the course in surveying, and the student is required to work out practical problems that he will probably meet in the practice of his profession.

The latter half of the year is devoted to coal mining, and includes, examination of coal properties, coal-cutting machinery, timbering, trackwork, coal-washing, and coking.

Text-books: Johnson's Surveying. Henck's Field Book. Coal and Metal Miners' Pocket Book. International Text Books.

Senior Mining.—Three hours per week during the entire session. Modes of occurrence and origin of the various ores and economically valuable mineral deposits. Prospecting and examination of mineral properties, including boring by different methods. Methods of opening up mineral deposits, breaking ground, supporting excavations, developing and working coal and metalliferous deposits, haulage, hoisting, drainage, ventilation, lighting, provisions for ascent and descent, ore-dressing and milling, principles of employment of labor, legislation affecting mines and quarries, and causes and prevention of accidents.

LABORATORY.

Three hours per week ore-dressing laboratory work is required of the seniors in chemistry and metallurgy and mining engineering courses.

Text-books: Foster's Ore and Stone Mining. Coal and Metal Miners' Pocket Book.

EXCURSIONS.

At the close of the junior year four weeks will be spent in some mining district in practical work and in examination of properties and the making of reports.

Summer work required between sophomore and junior years is the same as that for civil engineering course.

DRAFTING.

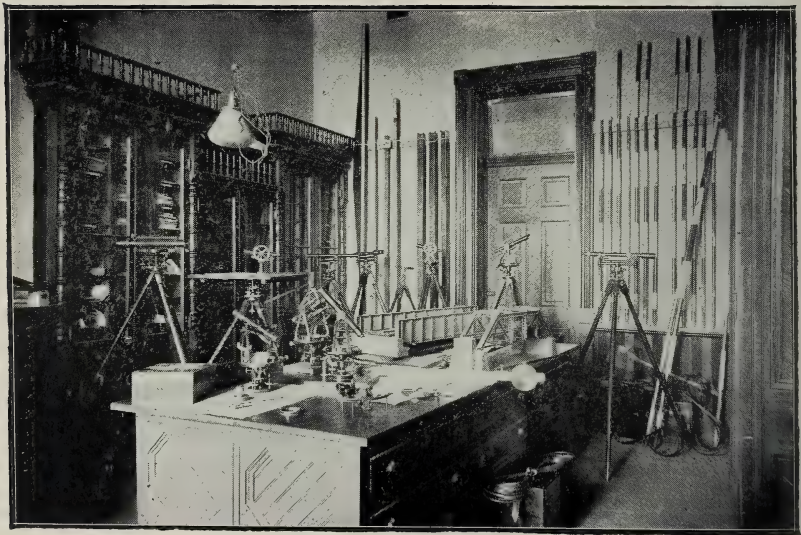
The junior class in mining engineering pursues a course in drafting, including free-hand lettering, mapping, and making detailed drawings to scale of various structures and machines related to mining.

The senior class students work up original plans for various parts of mining plants, a part of the work being in connection with their theses.

GRADUATE COURSE.

This course is offered to those who desire to pursue the subjects related to mining beyond the scope to which the two years' course necessarily limits them. The course will be arranged to meet the requirements of those desiring to take it.

ARCHITECTURE



CIVIL ENGINEERING

ARCHITECTURE.

PROFESSOR CURTIS.

The Trustees of the Alabama Polytechnic Institute established in June, 1907, a Department of Architecture, to comply with an increasing demand for instruction in this subject, and to encourage students to take up a profession which hitherto could only be pursued after an expensive term of study in the North.

The course as planned leading to the degree of B. S. in Architecture, covers a period of four years' study, of which the first two are devoted chiefly to intentional preparation in technical and cultural subjects leading up to the special instruction in architecture beginning in the junior year. The curriculum planned for the junior and senior years recognizes that architecture must be treated as an art as well as a science, and as drawing and design are the most essential things in an architect's professional work, the greatest possible amount of time is devoted to them. As arranged the afternoons of the week are devoted entirely to drawing, and the mornings to lectures on the technical studies. The work of the architect on account of its wide aspects requires not only a thorough knowledge of design and building processes, but a wide sympathy with all intellectual culture, and the student is encouraged throughout his course to improve his mind by reading literature, history, and science. The importance of descriptive geometry and its applications is emphasized by a very thorough course in the sophomore year, and this is continued during the fall term of the junior year in its special applications to architectural design and rendering.

INSTRUCTION.

A detailed description of the general courses pursued in the four classes may be had from other departments of this catalogue. In architectural drawing in the sophomore year, the student learns the orders, and practice is given in graded washes and some of the conventions of rendered drawings.

Ware's American Vignola, Parts 1 and 2, is the text.

HISTORY OF ARCHITECTURE.

Ancient, mediaeval, and modern history continuing through the three terms is given in the junior year. The recitation periods are occupied by lectures on the historic styles and monuments of architecture and their applications to modern design—supplemented by the exhibition of lantern slides, and reference to photographs and books. The student is required to consult selected articles in the library and to prepare independently several essays during each term on specified subjects, illustrated by sketches and tracings.

These are subsequently discussed and criticised. Such personal investigations are continued into the senior year, and the student gradually becomes familiar with standard books and acquires a working knowledge of historic forms. One hour each week is devoted to the closely related subject of ornament, and numerous tracings and color sketches are required from the best examples of every period.

Text-book: Hamlin's History of Architecture.

DRAWING AND DESIGN.

The study of design is pursued by means of assigned problems and individual and class criticism. Up to Christmas of the junior year the time is mainly devoted to a study of the order on a large and small scale by means of carefully composed frontispieces, and during the spring, problems are assigned which will enable the student to employ the orders in a monumental and scholarly manner. A consistent and faithful adherence to historic precedent is insisted upon.

During the senior year the course is conducted by means of sketch problems occupying eight hours, testing the student's originality and use of the classified knowledge at his command; by written programs for typical buildings and group plans in the presentation of which a month or more would be allowed; by a thesis design occupying two months of careful work, with a written memoir accompanying the same.

A lecture is given once a week on composition and the theory of architecture. Freehand drawing is given throughout the two years, practice being had in pencil, pen and ink, charcoal from the cast and water-color.

CONSTRUCTION AND OFFICE PRACTICE.

The courses in architectural engineering, and specifications of building materials take up a major part of the last year's work. In addition to the lectures and text book recitations, practical examples are demonstrated and problems worked out over the drawing board. Working drawing and details of completed buildings are carefully studied, and scale drawings made by the student on tracing cloth and blue-printed. The student is instructed in the use of the various steel manufacturers' handbooks and other pocket-books. Every other week a day is given to the solution of problems in constructive design, graphical analysis, etc., to illustrate the principles considered. Specifications are discussed and the different materials of construction, their manufacture and uses by the trades are described.

The course in specifications and building materials alternates with French. Juniors and seniors take these courses together every other year.

The text-books referred to are: Kidder's Building Construction and Superintendence, Parts 1, 2, and 3. Freitag's Architectural Engineering, Berg's Safe Building, etc.

GRAPHICS.

This course embraces the theory of projections, intersections and shades and shadows; perspective by the office method and isometric constructions to simplify complex perspective details; selected problems in stereotomy and stone-jointing. It furnishes the basis for architectural drawing, and an equivalent of the course in descriptive geometry given in the sophomore year is an essential pre-requisite.

The student is advised to spend a part of the summer vacation in an architect's office.

SPECIAL STUDENTS.

Applicants for admission as special students in architecture must show by certificate from a recognized college or by examination in mathematics, English, and history that their preparation is equal to that given in those subjects during the freshman and sophomore years in this institution. They will also be required to take descriptive geometry in addition to their course in architecture. Draughtsmen of two years' experience in an architect's office will also be admitted as special students provided their general education is satisfactory.

EQUIPMENT.

The department is located in three well lighted rooms in the main building of the college. A floor-space of 2,250 sq. ft. is occupied by a lecture room 25x30, a large draughting room 30x35, and a library, office, and filing room 15x30. These rooms are well furnished with substantial drawing tables for general and freehand drawing and extra equipment. A collection of selected plaster casts of classic sculpture and architectural detail; a large number of architects' working drawings and signed plates, and several hundred examples of free-hand drawings of various sorts. A library of standard books and portfolios of plates, illustrating details of decoration and composition, 250 lantern slides and numerous photographs of notable monuments of architecture. Manufacturers' samples and catalogues and general current journals devoted to architecture and the allied arts.

COURSE IN ARCHITECTURE.

JUNIOR YEAR.

1. *Theory of Architecture.* Elements of composition; the five orders and fundamental features of design; lectures and sketches from memory. Ware's American Vignola.

2. *History of Architecture.* Ancient, mediaeval, and modern history continuing through the three terms. Lectures and collateral reading; research and essays. Hamlin's History of Architecture.

3. *Graphics.* The principles of descriptive geometry applied to the shorter methods of working out architectural shades and shadows (projections and intersections). Prac-

tical methods of laying out perspectives. Problems in stereotomy. Lectures and plates.

4. *Drawing and Design.* Rendering in india ink wash any color of the orders and frontispieces. Rendered drawings of the plans and elevations of selected buildings. Freehand sketches in pen and ink, pencil and charcoal, of details of ornament. Simple problems in design and composition.

SENIOR YEAR.

5. *Architectural Engineering.* Wood construction and design of wooden floors, walls, ceilings, roofs, stairs, etc. Strength of beams, columns, girders, etc. Graphical analysis of beams, girders, roof trusses, arch vault, and dome. General framing in steel and construction in reinforced concrete. Practical problems in architectural construction to illustrate the application of the principles. Careful working drawings of specified cases. Masonry construction, foundations, etc. Use of handbooks. Freitag's Architectural Engineering; Kidder's Handbook.

6. *Specifications and Building Materials.* The various materials of construction, wood, stone, concrete, brick, terra cotta, cast iron, steel, etc., and their uses in buildings. Practice in writing specifications and lectures on the relation of architect to owner and contractor. Plumbing and plumbing fixtures.

7. *Drawing and Design.* Advanced problems in design and composition. A series of six monthly programmes ending with thesis design. Scale working drawings and full size details. Sketch problems.

MECHANICAL DRAWING AND MACHINE DESIGN.

ASSOCIATE PROFESSOR FULLAN.

INSTRUCTOR CERTAIN.

The drawing room is well lighted and is equipped with seventy-five convenient drawing tables with stools. Filing cases are provided in which are kept models for illustrating the principles of descriptive geometry; a varied collection of sectioned models of engineering specialties, and small machine parts; a library of manufacturers' catalogues and a small reference library. A large collection of manufacturers' blue-prints is made use of to illustrate methods of presentation and general drafting room practice. There are also filing cases for keeping the drawings, tracings, and blue-prints made by the students. A suitable outfit for making and washing blue-prints is installed and the students are encouraged to make and keep blue-prints of the designs they work out.

FRESHMAN CLASS.

1. *Mechanical Drawing.*—Three hours per week during the year. This course is arranged for those who intend to pursue the sophomore course in mechanical drawing. The work is principally that of linear drawing, including the most useful of the geometric constructions, arranged in progressive order. The one plant projections—cabinet and isometric—will be illustrated by means of suitable models, from which the students will make their drawings. In this course accuracy, neatness, the use and care of the instruments, and freehand lettering are given special attention.

SOPHOMORE CLASS.

I. *Descriptive Geometry.*—Four hours per week during the year. Required of all students preparing for engineering and architectural courses. The work is given by lectures, written recitations, and drafting room instruction. In this course theory and practice are combined with the purpose of training the student in the graphical expression of ideas. The instruction includes problems relating to the point, line, and plane; to tangents and normals; to cylindrical, conical, and warped surfaces; to sections, intersections, and developments; to shades, shadows, and perspective, and is intended to develop in the mind of the student a clear concept of magnitudes in space. The lectures and written recitations are to impart principles and to permit the instructor to meet the entire class, and with diagrams and models supplement the work of the text. The drawing, two hours per week, consists of plates of problems, which are selected from the text-book and other sources.

II. *Mechanical Drawing.*—Three hours per week during the year. This course is particularly recommended to those who wish to pursue the course in machine design. The work includes orthograhpic projection, sections, intersections, and developments, machine drawing, and freehand lettering. As a check on the work in sections and intersections, and to more fully illustrate the subject, paper models of the surfaces are made by the students from the developments.

JUNIOR CLASS.

I. *Kinematics of Machinery.*—Three hours per week during the first term. Required of juniors in the courses of mechanical engineering and electrical engineering. Under this head machines are analyzed and their elementary combinations of mechanism are studied. The communication of motion by gear wheels, belts, cams, screws, and link work, and the different ways of obtaining definite velocity ratios and definite changes of velocity in machine parts, parallel motions, and quick return motions, as well as the designing of trains of mechanisms for various purposes, together with the theoretical forms of teeth for gear wheels to transmit motion of these trains, are investigated under this subject.

II. *Machine Design. Lectures.*—One hour per week during the year. Required of juniors in the course of mechanical engineering. These lectures provide a brief course in graphic statics, graphical statics of mechanism, and the design of structures, including roof trusses for factory buildings, crane girders and frames, and water tank towers. The stresses in machines and structures are investigated by graphical methods. The use of the manufacturers' handbooks and drafting room practice are given special attention.

III. *Machine Design.*—Four hours per week during the year. Required of juniors in the courses of electrical engineering and mechanical engineering. Instruction is given in the design of fastenings and machine parts, and in the general methods of arranging views. Assembly drawings are given from which the student is to draw details, and detail drawings given to obtain assembly views. This course includes the design of cams, gear tooth outlines, quick return motions, and linkwork combinations, and supplements course I. in kinematics. Scale drawings of simple machines are made from dimensioned sketches which each student makes for himself from an actual machine or model. Tracings and blue-prints are made from each drawing. All the instruction is intended to familiarize the students with modern drawing office methods.

SENIOR CLASS.

I. *Machine Design. Lectures.*—One hour per week during the year. Required of seniors in the courses of mechanical engineering and electrical engineering. These lectures are intended to cover the general instructions to the students, such as the selection of materials for different machine parts, the rules for the proportion of parts to secure strength, symmetry, and cheapness of manufacture, and the best methods of making, recording and preserving, and calculations incident to the design of a complete machine. Much valuable engineering data in the form of notes and tables will be given as a supplement to the text book.

II. *Machine Design. Drawing.*—Six hours per week during the year. Required of seniors in the course of mechanical engineering. This is a continuation of the junior course in machine design. Original problems involving the design of complete machines to work under specified conditions, are assigned, and the student develops the idea in the form of sketches. These are submitted to the instructor for criticism, and are afterwards embodied in complete detail and assembled drawings. The calculations of each design are written up neatly and filed with the drawings. Special attention is given to the strength of the parts, to the harmonious or symmetrical appearance of the complete machine, and to the details as regards practical manufacture.

III. *Machine Design. Drawing.*—Three hours per week during the year. Required of seniors in the course of electrical engineering. The work given and the methods pursued are similar to those described in course II., just preceding, but the amount of work required is reduced in proportion to the amount of time given.

POSTGRADUATE WORK.

The work offered during the postgraduate year is an extension of that of the senior year. More of the theory of the subject is taught, more intricate machines are involved, and problems are given involving the design of a series of machines for manufacturing some specific article. The problems arising in the design of a line of machines of different sizes are also taken up, including the applications of graphical methods and the use of factors of enlargement and reduction. Special attention is given to the effect of current practice on the proportion of machine parts. Suitable text and reference books are used.

TEXT-BOOKS.

Faunce's Descriptive Geometry, Cross's Mechanical Drawing, Anthony's Machine Drawing, Low and Bevis's Machine Design, Barr's Kinematics of Mechanism, Kewon's Notes on Mechanism, Benjamin's Machine Design, Smith and Marx's Machine Design, Mack's Notes on Machine Design, International Text Books on Machine Design.

AGRICULTURE.

PROFESSOR DUGGAR.

INSTRUCTOR DUNCAN.

The regular agricultural course extends through four years and is intended to prepare those who complete it to become successful farmers, farm superintendents, and agricultural scientists in the various divisions of agricultural work in the U. S. Department of Agriculture and the numerous agricultural colleges and experiment stations. The studies in the regular agricultural course are so arranged that a student may obtain a thorough education while acquiring the technical training necessary to the most successful management of farming operations and of agricultural investigation or teaching. No foreign language is required for graduation in this course, but those who expect to engage in the scientific work of the U. S. Department of Agriculture or of the agricultural colleges and experiment stations, have the opportunity to study Latin, French, and German, or any one or two of these.

For the benefit of those who are unable to spend four years at college and who desire to prepare for the management of a farm, a short or two-year course in agriculture is provided. In this the student devotes his entire time to those studies having a direct bearing on his future occupation.

The following courses of instruction are offered:

A. *Introduction to Agriculture.*—This is a short course of lectures given in the third term of the freshman year, and dealing with some of the simplest phases of agriculture.

1. *Principles of Agriculture.*—Second term, sophomore class. Lectures, recitations, and laboratory practice dealing with the soil and the conditions necessary to the growth of crop plants. Methods of preparing and cultivating the soil are considered.

2. *The Small Grains.*—Third term, sophomore class. Lectures, recitations, and field practice on wheat, oats, rye, and barley. These plants are treated both as grain crops and as forage plants.

3. *Corn.*—First term, junior class. Lectures, recitations, and field practice on the cultivation, judging, and improvement of corn. The student assists in harvesting certain experiments, becomes ac-

quainted with a number of the best varieties, learns to select the best ears and the best plants, and notes the results of experiments in improving or breeding corn.

4. *Leguminous Forage Plants and Soil Improvement.*—Third term, junior class. Lectures, recitations, and field practice on this most important group of forage plants, including cowpeas, soybeans, alfalfa, the clovers, vetches, etc. These plants are treated both with reference to their use as forage plants and as means of improving the soil.

5. *Grasses and Hay Farming.*—First term, senior class. The principal grasses suitable for this latitude are considered with reference to their soil requirements, time of sowing, propagation, fertilization, and culture. The principles of hay making receive attention.

6. *Cotton.*—First term, senior class. Lectures, recitations, and field practice in identifying and comparing a large number of varieties growing on the experiment station farm; judging individual cotton plants, and lectures on the cultivation, fertilization, and improvement of cotton. The collection of varieties growing on the experiment station farm usually numbers between fifty and one hundred varieties, and all of these are available for students' use.

7. *Cotton Classing and Machinery.*—Second term, senior class. This course of laboratory work consists during the first part of the term of practice in classing the commercial grades of cotton by comparing great numbers of samples procured from the offices of cotton buyers with a nearly complete set of type samples owned by this department. A part of this practice will be under the supervision of experienced cotton buyers. During the latter part of the term students are given practice in the handling and sharpening of gins and special work with other machinery used in connection with the cotton crop.

8. *Farm Management.*—Third term, senior class. A course of lectures and practice dealing largely with rotation of crops, cost of producing different crops, systems of farming, selection of a farm, and plans for the best use of the farm or soil in which each student is most interested. This course is intended to give the student an opportunity to bring to bear on practical problems the information acquired from preceding courses of instruction in agriculture and related subjects.

9. *Investigation as a Basis for a Thesis.*—Entire senior year. After a month spent in special reading under the direction of the professor of agriculture with a view to the selection of a subject for a thesis, the student will perform some agricultural experiment in crop production, soil treatment, or in testing farm machinery. Suitable facilities for such thesis work are provided in the

fields and agricultural laboratories. In addition to conducting an original experiment the student will review the literature of agriculture to ascertain the results of similar or related experiments. It is expected that the results of some of these experiments will be worthy of publication.

10. *Farm Machinery.*—First term, senior class. Recitations and practice in setting up and operating various kinds of farm machinery, including mowers, grain drills, self binders, etc.

11. *Soil Physics.*—Second and third terms, senior class. Recitations and laboratory practice intended to acquaint the student with the physical properties of soils, with the principal soils of Alabama, and especially those of the region from which each student comes. Instruction in this course will be given with a view to fitting a student to engage in the soil survey work of the U. S. Department of Agriculture, as well as to prepare him for the rational management of the soil of the farm.

12. *Special Crops.*—Second term, senior year. A course of lectures dealing with sugar cane, tobacco, rice, broom-corn, and other southern crops not treated in other courses.

Postgraduate courses in crop production, agricultural experimentation and teaching, and farm management are offered. The exact nature of the subject will depend upon the special requirements of the student.

Students taking a four-year course in agriculture receive instruction in the various branches of animal industry and horticulture, as well as in the natural sciences bearing on agriculture.

BOTANY.

PROFESSOR WILCOX.

INSTRUCTOR STONE.

ASSISTANT WOOD.

1. *Elementary Botany.*—This course offers a general introduction to the science of botany, and is therefore a prerequisite of all other courses in botany. The general principles of morphology and classification will be developed from the standpoint of physiology and ecology. In the laboratory the student will become acquainted with the general morphology and physiology of the spermatophytes and some of the most important facts of ecology. 3 (4) Spring Term.

2. *Morphology of Algae and Fungi.*—A critical study of typical Algae and Fungi including culture methods for the study of

life histories. The lectures and recitations will be upon the morphology and phylogeny of the various groups. 2 (4) Fall Term.

3. Continuation of 2. Winter Term.

4. Continuation of 2. Spring Term.

6. *Comparative Anatomy of the Spermatophytes.*—A thorough study of the structure and activities of the plant cell will be followed by an examination of the typical tissues with special reference to their function. Students are required to become acquainted with general methods of botanical microtechnique, including the fixing, killing, imbedding, sectioning, staining, mounting and drawing of all the tissues examined. 1 (3) Fall Term.

7. Continuation of 6. Winter Term.

8. Continuation of 6. Spring Term.

10. *Plant Physiology.*—This is a course of carefully selected experiments to be performed by each student, supplemented by selected readings, conferences and lectures upon certain subjects. It will be the aim of the course to develop a good general knowledge of the most important functions of plants, such as absorption, photosynthesis, transpiration, respiration, etc. 2 (4) Fall Term.

11. Continuation of 10. Winter Term.

12. Continuation of 10. Spring Term.

14. *Plant Pathology.*—The aim of this course is to present a broad and comprehensive view of the subject. A thorough study will be made of the most important diseases of economic plants due to parasitic fungi, but not to the exclusion of diseases due to unfavorable inorganic factors and disturbed nutrition. 2 (4) Fall Term.

15. Continuation of 14. Winter Term.

16. Continuation of 14. Spring Term.

18. *Morphology of the Bryophytes, Pteridophytes, and Spermatophytes.*—Special studies of typical representatives. The lectures and recitations will have special reference to the morphology, genetic relationship, and phylogeny of the various groups. 2 (4) Fall Term.

19. Continuation of 18. Winter Term.

20. Continuation of 18. Spring Term.

22. *Taxonomy of the Spermatophytes.*—Studies of the most important families with special reference to plants of economic importance. 2. Fall Term.

23. *Poisonous Plants.*—Studies of the taxonomy and geographical distribution of poisonous plants. 2. Winter Term.

24. *Medical Plants.*—Studies of the taxonomy and geographical distribution of plants employed in medicine. 2. Spring Term.

26. *Phytogenesis.*—The leading facts and theories of variation,

VETERINARY LABORATORY

mutation, and heredity; theories of evolution and the principles and practice of breeding. 2. Fall Term.

27. Continuation of 26. Winter Term.

28. Continuation of 26. Spring Term.

RESEARCH COURSES FOR GRADUATES AND OTHERS.

30, 31, 32.—*Physiology and Morphogenesis.*

34, 35, 36.—*Pathology and Pathological Anatomy.*

38, 39, 40.—*Biometry and Thremmatology.*

42, 43, 44.—*Cytology and Histogenesis.*

46, 47, 48.—*Special Morphology of Selected Groups.*

50, 51, 52.—*Botanical Seminar.*—It is expected that meetings will be held twice pèr month at which the results of the latest investigations in various languages will be presented and informally discussed. The seminar will be open to all juniors, seniors, and graduates taking work in this department, and to others who may be interested in the subject.

THESIS WORK.

Students who expect to undertake research or thesis work in this department during their senior year should consult in advance as to the subject so that material may be provided for their work. Students in the general course who wish to take their elective laboratory work in botany should if possible consult about it before the end of their sophomore year.

PHYSIOLOGY AND VETERINARY SCIENCE AND MEDICINE.

PROFESSOR CARY.

INSTRUCTOR GILTNER.

INSTRUCTOR M^CADORY.

ASSISTANT THREADGILL.

LECTURER BAHNSEN.

PHYSIOLOGY.

The students in the regular and special agricultural courses, in all of the pharmacy courses, in the course in chemistry and metallurgy, and in the three-year course in veterinary medicine and surgery—all study elementary physiology. The instruction is given by lectures, demonstrations, and text-book. The text-book used this year was Hough and Sedwick's "The Human Mechanism". The aim of the work is to give the student anatomy, histology, physiology, hygiene, and sanitation.

VETERINARY SCIENCE.

The students in the course in chemistry and agriculture are given two hours' recitations or lectures and three hours a week in clinical work during the junior and senior years. To do this work the student may elect, with the consent of the professor in charge, the lecture or recitation work in any of the classes in the three-year veterinary course, provided the time and work are equivalent to the time required in the agricultural course. The aim of the instruction given to agricultural students is to give them such lessons as will enable them to prevent many diseases of animals on the farm by correct hygiene and proper sanitation. At the same time they will be instructed in the ways and means of treating and handling the common diseases of farm animals.

This work will prepare them for "first aid" treatment and emergencies as well as fit them for the course in veterinary medicine and surgery, as well as for a course in human medicine.

VETERINARY MEDICINE AND SURGERY.

The three-year course in veterinary medicine and surgery leads to the degree of Doctor of Veterinary Medicine. It is the outgrowth of the fifteen years' work of the department of physiology and veterinary science. Moreover, it has been established to meet the demand of the young men of the South who desire to become educated veterinarians.

EQUIPMENT.

The main veterinary building has an independent gas, water, and sewer system, and its electric lights come from the electrical department. The building contains an office, two lecture rooms, and a museum on the first floor; on the second floor are located two research laboratory rooms with incubator closets, a library reading room, a pathological museum, a dark room with facilities for photography, and a large well lighted laboratory room provided with a large incubator room and all the necessary apparatus for pathological, histological, and bacteriological work; the third floor contains a store room and a place for a water tank.

A separate building is used as a house for small animals (rabbits, guinea pigs, pigeons, etc.) that are employed for experimental and demonstration work.

The anatomy division has a separate one-story brick building with good ventilation and extensive sky-light. It is supplied with gas, water, and electric light. The anatomy museum contains the skeletons of man, the horse, the ox, the sheep, and the pig, and models of the limbs and special organs of man and the horse. It is also supplied with different lots of bones of the horse and with dissected and dried limbs showing the relation and attachments of muscles.

The veterinary hospital contains five box-stalls, four open single stalls, an office, and a feed room, on the first floor; a large room for storing hay, fodder, and feed is found on the upper floor. The veterinary department has for its exclusive use about six acres of land divided into lots, pens, and paddocks. In one of the lots are located two large sheds having a capacity for accommodating one hundred and twenty-five cattle or large animals. These sheds are used for tick fever inoculation purposes and for isolation of animals affected with infectious diseases.

The three-year veterinary course students take five terms of work in the department of animal husbandry and dairying; one year's work in pharmacy; four terms of work in the chemical department; one year's work in botany and one year's work in physics. The course, facilities, and equipment of these departments are excellent, as may be seen by referring to the description of each of them in this catalogue.

The veterinary course is especially strong in practical laboratory work.

1. In anatomy the work of dissection is carried on throughout the entire course of three years. It is a well established fact that useful, surgical, or real anatomy can not be acquired without careful and thorough work in the dissecting room. Special stress is given to comparative anatomy.

2. Clinical laboratory work is also required throughout the course. The clinical work comes six days in the week and the cases presented embrace mules, horses, cattle, sheep, dogs, and hogs. The variety is such as to illustrate a large number of diseases, surgical operations, and therapeutic applications.

3. While our physiological laboratory is not yet complete, it will be adequately equipped at an early date.

4. The laboratory for pathology, histology, and bacteriology is extensive, and is fully fitted with the latest apparatus. This laboratory has been the outgrowth of sixteen years of cumulative additions. Our aim is to teach students to do work in the laboratory rather than have them memorize the printed pages of the text books.

5. In chemistry and toxicology the students work in one of the best of chemical laboratories.

6. In pharmacy, the students work in practical pharmacy for three to five hours a week for a year. In this they learn to recognize, compound, and dispense drugs.

7. The animal husbandry department affords ample facilities for practice in feeding and judging cattle, sheep, hogs, and mules.

8. The dairy department gives practical laboratory work in dairy operations and in handling and feeding dairy cattle.

9. The botanical department is well equipped and gives excellent opportunity for laboratory work.

The subjects taught in the three-year course in veterinary medicine and surgery may be seen by referring to the course as printed on pages 74 and 75 of this catalogue. The subjects are such as are required in regular and recognized veterinary colleges of America. The course covers the ground as well as a majority of the veterinary colleges and meets the requirements of the American Veterinary Medical Association. The teaching staff will also meet the requirements of the best standards. The length of the course is three years of nine months each.

POSTGRADUATE WORK.

This department offers postgraduate work in histology, pathology, bacteriology, meat inspection, milk inspection, and anatomy.

TEXT-BOOKS.

General Chemistry, Remsen's College Chemistry; Physiology Recitations, Huxley's; Physiology Laboratory, Fish's Elementary Exercises in Physiology; Smith's Manual of Veterinary Physiology; Physics, to be announced in September; Anatomy, Chauveau's Comparative Anatomy; Clinical Laboratory, Blank Books

or Note Books; Microscopy, Gage's "The Microscope," Lectures; Histology, Piersol, Stohr, Schafer, Lectures; Embryology, Hertwig-Mark, Minot, Lectures; Livestock Management, Lectures and text-books to be announced later; Feeding Livestock, Smith, Henry, Jordan; Animal Husbandry, Craig and Lectures; Botany, Lectures; Pharmacy, Lectures; Bacteriology, McFarland's Pathogenic Bacteria, Moore's Lab. Guide, Lectures; Pathology, Zigeler and Lectures; Special Pathology, Lectures; Obstetrics, Lectures, DeBruin, Fleming, Dalrymple; General Surgery, Lectures and Frohner; Special Surgery, Lectures, Moeller, Merillat, Frohner; Surgical Exercises, W. L. Williams; Materia Medica and Therapeutics, Wilcox, Winslow, Fish, Quitman; Veterinary Medicine, Law, Vol. 4; Parasites, Neuman, Law, Vol. 5, Stiles; Milk and Meat Inspection, Van Slyke, Conn, Ostertag, Peters; Toxicology, Tanner; Urine Analysis, Fish.

PHARMACEUTICAL CHEMISTRY, PHARMACY, PHARMACOGNOSY, AND PRESCRIPTION WORK.

PROFESSOR MILLER.

ASSISTANT PERDUE.

ASSISTANT DOW.

JUNIOR YEAR.

Pharmacy.—Class work, *three hours* a week. The different systems of weights and measures. Specific gravity. Pharmaceutical problems. The fundamental operations in pharmacy. Apparatus used in pharmaceutical processes. Discussion of all classes of pharmaceutical preparations.

Laboratory, *six hours* a week. Preparation of official and non-official galenicals.

Pharmacognosy.—Class work with laboratory work, *four hours* a week. All official vegetable drugs studied with aid of simple and compound microscope.

SENIOR YEAR.

Pharmacy.—Class work, *five hours* a week. Official and non-official pharmaceutical chemicals, inorganic and organic, including the more important newer remedies.

Laboratory, *fifteen hours* a week. Preparation of official and non-official pharmaceuticals, inorganic and organic, chemicals. Pharmaceutical testing by pharmacopœial methods. Drug assaying. Practical exercises in identification of pharmaceutical preparations and chemicals.

Art of Dispensing.—The prescription. The study of several hundred original prescriptions from drug-store files. Incompatibilities. Doses.

Pharmacognosy.—Class work with laboratory work, four hours a week. The study of all official crude drugs and the more important non-official ones.

The practical work in pharmacy includes the manufacture of not less than two hundred pharmaceutical preparations and the compounding of not less than fifty prescriptions.

The work in pharmacognosy includes the study of more than 200 drugs, each of which the student is required to recognize by its physical and chemical properties, giving Latin name, common name, origin, habitat, constituents, medicinal action, and dose.

The work of the third year in the special course in pharmacy may be elected from the following courses:

1. An advanced course in the manufacture of galenicals and organic and inorganic chemicals used in medicine. 2. A course in the testing of drugs and medicinal chemicals for impurities by pharmacopœial methods. 3. A course in pharmaceutical assaying, including the assay of alkaloidal drugs, glucosidal drugs, resinous drugs, the valuation of fixed and volatile oils, pepsin, diastase, etc. 4. A course in water analysis. 5. A course in milk and butter analysis. 6. A course in physiological chemistry. 7. A course in organic preparations. 8. An advanced course in toxicological analysis. 9. The presentation of a satisfactory thesis.

Any one who completes the work of the three-year special course in such a manner as to prove himself a competent analyst will be granted the degree of Pharmaceutical Chemist.

The pharmacy department of this institution is a member in good standing of the American Conference of Pharmaceutical Faculties.

TEXT AND REFERENCE BOOKS.

Caspari's Treatise on Pharmacy, Sayre's Organic Materia Medica and Pharmacognosy, Culbreth's Materia Medica and Pharmacognosy, Scoville's The Art of Compounding, Beal's Prescription Practice, Dorland's Pocket Medical Dictionary, Ruddiman's Incompatibilities in Prescriptions, Lyon's Pharmaceutical Assaying, United States Pharmacopœia, United States Dispensatory, National Dispensatory, National-Standard Dispensatory, King's American Dispensatory, Prescott's Organic Analysis, Allen's Commercial Organic Analysis, Pharmaceutical Journals, Reports of American Pharmaceutical Association.

HORTICULTURE.

PROFESSOR MACKINTOSH.

ASSISTANT WILLIAMS.

Instruction in this department consists of lectures, recitations, and exercises in the greenhouse laboratory, orchards, and gardens of the experiment station. It is the aim to give a thorough course in the practical and scientific phases of the growing of our economic fruit, vegetable, and ornamental plants.

1. *Principles of Plant Culture.*—Junior class. The care of horticultural plants in general. Propagation, transplanting, pruning, and spraying.

2. *Fruit Growing.*—Junior class. Special attention is given to the growing of fruits in this portion of the United States.

3. *Pomology.*—Senior class. A study of the varieties of fruits and methods of growing, etc.

4. *Vegetable Gardening.*—Senior class. With special reference to the growing of vegetables for home and market.

5.--*Landscape Gardening.*—Senior class. An introduction to the subject as an art of design with practical field exercises on improvement of the grounds about farm homes and schools. A study of the trees, shrubs, vines, and other plants especially adapted to this section will also be made.

6. *Spraying.*—Senior class. A study of the spray mixtures used in controlling the insect and fungous enemies of fruits and vegetables.

7. *Greenhouse Management.*—The care of greenhouses, hotbeds, and coldframes. The growing of greenhouse plants.

8. *Forestry.*—Senior class. A study of the forest conditions of Alabama. Care of woodlots. Uses of wood and methods of preservation.

9. *Thesis.*—Each student in Group "B" must select a subject for a thesis to be presented at the end of the session.

ANIMAL INDUSTRY.

PROFESSOR GRAY.

ASSISTANT RIDGWAY.

Instruction in this department is given in the class room, in the laboratories, and upon the animal industry farm with the stock. Class room work in dairy instruction is supplemented and strengthened and made practical by requiring each student to work in the dairy laboratory where butter is made, where the Babcock test is used, and where the lactic acid in cream is determined, etc. While lectures are given on how to judge animals, the instruction does not stop with the lectures; the students are taken to the barn and feed-lots where animals are placed before them and each student is required to make a written report concerning the animal. The live stock provided for the students' use in studying breeds and judging animals consists of Angus, Jerseys, Hereford, and Shorthorn cattle; Duroc-Jersey, Berkshire, and Poland China hogs; Southdown, Dorset, common, and grade sheep.

The department now has the complete herd books of practically all the leading breeds of live stock in America. By the use of these the student is enabled to inform himself in regard to all pedigrees and to study the different scales of points which the breeders have adopted to represent the highest types of the various breeds.

The student is given an opportunity to specialize in animal industry throughout the senior year.

1. *Breeds of Livestock.*—The object is to study the origin, history of development, and characteristics of each one of the principal breeds of live stock, and to discuss the special adaptability of each breed to Southern conditions. The lecture work is supplemented, as far as possible, by representative animals of the breed under discussion. Lecture; twice a week during third term of freshman year.

2. *Dairying.*—The study of the secretion, character, and composition of milk. Proper methods of handling milk and cream for consumption; Pasteurizing, sterilizing. The students are given thorough work in using the Babcock test and the lactometer, and the different acid tests, together with the ordinary tests for the purity of milk and its adulteration. They are also drilled in all the phases of butter making. Lecture and laboratory work; twice a week during the first term of the sophomore year.

3. *Judging Live Stock.*—The object of this course is to get the student familiar with the dairy and beef types of animals and to appreciate their differences in function and conformation. Work is also given in judging swine and sheep. Instruction is given

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EXPERIMENT STATION

largely by the use of the score card. Laboratory; twice a week during the second term of the sophomore year.

4. *Principles of Feeding.*—(Two terms.) The processes and requirements of the animal body are first considered, as the digestion and the utilization of food and conditions affecting them. Then the common feding stuffs are considered and a study made of their composition, their comparative value considered chemically and physiologically, and with reference to their fertilizing constituents. Work is given in compounding rations for the various kinds of live stock. Lectures; twice a week during the second and third terms of the junior year.

5. *Herd Book Study.*—This includes a study of the various herd books with a view to becoming familiar with the pedigrees of the leading strains and families of the different breeds of live stock. The second one-half of the term is devoted to judging horses and mules. Laboratory; two hours a week during the second term of junior year.

6. *Principles of Breeding.*—(Two terms.) This course embraces the study of the principles of breeding live stock, including the study of variation, its extent and causes; heredity from a statistical standpoint; selection; importance of fecundity, and the use, or abuse, of in-breeding, cross-breeding, grading-up, with a presentation of the practical application of these principles to the breeder's conditions. Lectures; twice a week during the first and second terms of the senior year.

7. *Practical Feeding.*—This course consists of a series of lectures, supplemented by reference reading, upon the most profitable methods of producing, finishing, and marketing swine, beef cattle, and lambs. Feeding dairy cows and marketing the dairy products are also given consideration. Lectures; twice a week during first term of the senior year.

8. *Live Stock Management.*—This course is outlined to meet the requirements of the veterinary students. It consists of a series of lectures on the care, housing, and management of horses, cattle, sheep, and swine. Lectures; twice a week during first term of the freshman year.

9. *Judging Live Stock.*—For the first year veterinary students. It consists in judging stock, special reference being given to horses and mules and dairy cattle. The object is to get the student familiar with the normal animal body in order that the abnormal or diseased conditions may be readily recognized. Laboratory work is given twice a week during the third term.

10. *Meats.*—This consists of a study of the structure and composition of meats, quality, cost, and food value of the various cuts

of beef, mutton, and pork; exercises are also given in judging the carcasses of the different classes of animals. A study is made of how to home-dress and home-cure pork. Lectures are given upon the effect of feeding and breeding of the animals as affecting the value of the carcass and the quality of the meat. Laboratory; twice a week during the second term of senior year.

11. *Judging Horses and Mules.*—Here the student is given an opportunity to become familiar with the various classes of horses and mules which are adapted to Alabama conditions and to study the conformation of each class. Laboratory; twice a week during first term of senior year.

Ample opportunity and encouragement is extended to those students who wish to do postgraduate work in animal industry. With the completion of the new building there will be opened up fully equipped laboratories for work in this department. Applicants for graduate work will be assigned special research work in some line of animal industry and will be aided in his line of investigation.

ENTOMOLOGY.

PROFESSOR HINDS.

In view of the great and constantly increasing importance of a general knowledge of insect life as it affects human welfare in innumerable ways, the course of instruction in entomology has been entirely revised and greatly amplified. The rearrangement of the various courses of study most distinctive of the agricultural work of the institution will now allow the giving of a much more complete course in this subject than has been possible heretofore.

Entomology will be taught during the first and third terms of the senior year. The instruction will be given principally through lectures which will be supplemented by laboratory and field exercises. So far as may be possible the subject under consideration will be illustrated by museum specimens, photographs, and actual examples of the insect at work. In this way the work may be made of greatest human interest and of most practical utility to the student.

During the first half of the fall term special attention will be given to "general entomology," showing the relationship of insects to other forms of animals, their most distinctive characters, the principal features of their development and the physical basis for the determination of the most important groups of insects. During the latter part of this term will be taken up some of the most important questions in the relation of insects to each other and to their environment. Particular attention will be given to the very important role of insects in the transmission of diseases and also to the benefits conferred by insects through the fertilization of flowers and the production of articles of value to man.

In the spring term the work must be confined to "economic entomology," which may be briefly defined as the study of the injuries caused by insects and of methods for the destruction of the pests or for the prevention or mitigation of the damage done by them. This will include studies of the life histories of the principal, typical insect pests and of the general principles, as well as some of the special applications, of insecticide preparation and application.

Every facility possible will be given those students desiring special or advanced work in this subject.

No special text books will be required, but the most pertinent works of reference will be constantly available, and the students instructed and encouraged in their use.

MILITARY SCIENCE AND TACTICS.

COL. B. S. PATRICK, Commandant.

Military science and tactics are required by law to be taught at this institution. The law is faithfully carried out by imparting to each student, not physically incapacitated to bear arms, practical instruction in the school of the soldier, of the company, and of the battalion in close and extended order, in guard mountings, inspections, dress parades, reviews, etc.

Under Section 1225, U. S. Revised Statutes, the college is provided with U. S. magazine rifle, calibre 30, model 1898, and accoutrements.

The following uniform of standard cadet gray cloth has been prescribed for dress: coat and trousers as worn for fatigue at West Point, with dark blue cadet cap. A neat and serviceable uniform can be obtained here at fifteen dollars. This is less expensive than the usual clothing. All students are required to wear this uniform during the session.

The entire body of students is divided into companies. The officers are selected for military efficiency, good conduct and scholarship. The commissioned officers will be selected from either the senior or the junior class, and promotion will depend on merit and not wholly on seniority.

A band, composed of cadets, furnishes appropriate music at all reviews and parades, and on other special occasions.

A student who has once accepted an office cannot resign it except for reasons entirely satisfactory to the President and the Commandant. The resignation of an office will usually not be considered without first placing all the circumstances of the case before his parent or guardian.

Candidates for appointment or promotion may be required to stand an examination. Moral fitness, including demerits, will be considered.

Each company is officered by one captain and two first lieutenants, one second lieutenant, and with a proper number of non-commissioned officers. The officers and non-commissioned officers are distinguished by appropriate insignia of rank. These appointments are confirmed by the President on nomination of the Commandant.

The junior class recites once a week in the United States Infantry Drill Regulations.

The senior class recites once a week in Wagner's Security and Information, and Manual of Guard Duty, U. S. Army.

On the graduation of each class the names of such students as have shown special aptitude for military service will be reported to the Adjutant-General of the U. S. Army, and the names of the three most distinguished in military science and tactics will be inserted in the U. S. Army Register, and published in general orders from headquarters of the army.

CADET BAND.

A. L. THOMAS, Bandmaster.

J. D. HENDERSON, Assistant Bandmaster.

Three musical organizations are now maintained at the college—The band, the orchestra, and the glee club.

Membership to any and all organizations is open to all students, provided of course, the applicant has talent.

The band is maintained by the college for students who desire to develop their musical ability and for those who wish to learn music. It furnishes music for all college exercises and takes part in the military manoeuvres. Regular and individual instruction is given free of charge during the first term, embodying the rudiments of music and general musical information in conjunction with the practical instruction on the instrument. Public concerts are given weekly during the second term, and engagements elsewhere are usually arranged after this work.

A gold medal is given each year by the Bandmaster to the member who makes the best general record.

The orchestra is an organization for musical recreation, and members are carefully selected by the director, according to their musical ability.

The glee club, comprising the quartette, chorus, and stringed instruments, is a student organization.

The services of a musician are usually secured to assist with the instruction and training of the quartette and chorus. Two concerts are given at the college and a concert tour is usually arranged during the third term.

MISCELLANEOUS.

GYMNASIUM AND ATHLETIC FIELD.

The gymnasium is situated at the west end of the athletic and drill grounds, and contains one room, 80x40 feet, with strong beams above for fastening the usual fixtures.

It is equipped with Spalding's gymnasium apparatus and is open to all students at stated hours, under the care of an officer.

The athletic field has a quarter-mile cinder track and ample space for football, baseball, and general athletics.

DRAKE ATHLETIC FIELD.

A new athletic field, named in honor of the Surgeon of the College, Dr. J. H. Drake, has been provided for baseball, football, and track athletics. It is situated on the Experiment Station grounds near the gymnasium. It will be gradually beautified and equipped with necessary buildings and accommodations.

DISCIPLINE REGULATIONS.

The government of the college is administered by the President and Faculty in accordance with the code of laws and regulations enacted by the Trustees.

Each student upon entering is required to sign his name in the matriculation book and pledge himself to obey the rules and regulations of the college.

All students are required to wear the prescribed uniform.

Attention to study and punctuality in attendance on recitations and all other duties, are required of every student. Students are prohibited from having in their possession arms or weapons not issued for the performance of military duty, and also from using or causing to be brought into the college limits, intoxicating liquors.

Students are not permitted to participate in any public entertainment, or game, without previously obtaining the consent of the Faculty.

No student will be permitted without the approval of his parent or guardian, to take part in a public game of football.

No student who has failed in two or more subjects will be permitted to be absent from college for athletic contests or other purposes.

(a) Every absence from recitation or examination is graded zero.

(b) When the grade of a student is lowered by reason of absence for which satisfactory excuse can be rendered, a special re-examination may be subsequently granted, and the grade made on the special re-examination alone is substituted for that previously received.

(c) Only sickness, as reported by the Surgeon, or absence by reason of family sickness, or official or collegiate business, will constitute a satisfactory excuse for granting a re-examination.

When a student is called away from college by his parents for reasons other than those specified above, his zeroes for absence are not removed.

The term grade of a student is the average of his daily sessional and term examination marks, found by giving due weight to the term examination.

Privates of the senior class in full standing who are candidates for graduation may be excused by the President from all military drills, and also students over twenty-one years of age at *the time of entering college* that are permitted to devote their time to one special study, as chemistry, agriculture, pharmacy, or engineering, provided the time devoted to drill is spent by them in laboratory work.

No student can remain an officer who receives during the session more than one hundred demerits.

BOARDING.

The students board almost entirely with families of the town of Auburn, and thus enjoy all the protecting and beneficial influences of the family circle.

For each house an inspector is appointed, whose duty it is to report those who are guilty of any violation of order. The report of the inspector is made to the Commandant at stated intervals.

Students, after selecting their boarding houses, are not permitted to make changes without obtaining permission from the President, and this permission is given only at the close of a term, except for special reasons approved by the parent.

MILITARY DRILL.

There are three regular military drills each week, and all undergraduate students, not physically incapacitated to bear arms, are required to engage in these exercises; privates of the senior class are exempt.

The drills are short and the duty involves no hardships. The military drill is a health-giving exercise, and its good effects in the development of the *physique* and improvement of the carriage of the cadet are manifest.

RELIGIOUS SERVICES.

Religious services are held every morning in the chapel.

All students, unless excused on the written request of parents for religious scruples, are required to attend these exercises, and also to attend the church of their choice on Sunday morning.

Opportunities are also offered for attending Bible classes every Sunday.

YOUNG MEN'S CHRISTIAN ASSOCIATION.

This association is regularly organized and has a well furnished room on the first floor of a building set apart for its exclusive use. Through its weekly meetings it exerts a wholesome Christian influence among the students.

Students are advised to unite with the association when they enter the college.

The ladies of the different churches in Auburn are organized into an auxiliary association to the Y. M. C. A. of the college.

The following are the officers of the association.:

Samuel Oliver White	President
William Ivy Pittman	Vice-President
Oakley Mills Geibel	Treasurer
Clyde McNeel Howard	Recording Secretary
Talmage Coates Hughes	Librarian

DISTINCTIONS.

Distinctions are awarded in the different subjects of each class to those students whose grade for the entire year is above ninety per cent.

Certificates of distinction are awarded in public on Commencement day to those who obtain an average of ninety per cent. in all the prescribed studies of a regular class; and also to those who obtain three distinctions in the freshman class, four in the sophomore class, five in the junior class, and six in the senior class; provided they have satisfactorily passed all the regular examinations of that session, and have not received forty demerits during the year.

A distinction is not given in the senior class if the average grade in any one subject is less than 75 per cent.

HONORS.

Members of the senior class who attain distinction at the final examinations with an average grade, in the subjects required, of 95 per cent. are published as

GRADUATES WITH HIGHEST HONOR.

Those who attain distinction with an average grade of 90 per cent. and less than 95, are published as

GRADUATES WITH HONOR.

Those who attain less than 90 per cent. and more than 60 per cent. are published as *Graduates.*

Students of the classes lower than the senior, who attain distinction with an average grade in the required subjects of 95 per cent. are published in alphabetical order as having attained *Highest Distinction.*

RECORDS AND CIRCULARS.

Daily records of the various exercises of the classes are kept by the officers of instruction.

At the close of each term and at regular intervals reports giving the grade made by each student are sent to the parent or guardian.

EXAMINATIONS.

Written examinations on the studies of the half-term are held by each professor during the months of October, February, and April. Each examination occupies one hour.

At the end of each term written examinations or written and oral, are held on the studies passed over during that term.

Special examinations are held only by order of the Faculty, and in no case will private examinations be permitted.

Students falling below the minimum grade at the final examinations, can be promoted to full standing in the next higher class only on satisfactory examinations at the opening of the next session.

It is required that every student who enters the College shall remain through the examinations at the end of the term. Leaves of absence and honorable discharges will, therefore, not be granted within three weeks of the examination, except for providential reasons.

SCHOLARSHIPS—PRIZES.

The following scholarships and prizes have been established:

The William LeRoy Broun Memorial Scholarship of $170, established by the Alumni Society in memory of the late distinguished President of the Institute.

The Ligon Scholarship of $170, established by Col. R. F. Ligon, Montgomery, Ala.

The Thomas Scholarship of $170, established by Judge William H. Thomas, Montgomery, Ala.

The Ball Scholarship of $170, established by Mr. Fred S. Ball, Montgomery, Ala.

THE DUNKLIN SCHOLARSHIP OF $600, established by Mr. and Mrs. J. C. Street, Anniston, Ala., in memory of Prof. J. T. Dunklin, formerly Professor of Latin in the college.

The scholarships enumerated above are loan scholarships, granted to worthy young men or women, to be returned after graduation. No interest is charged until one year after leaving college.

The above-named scholarships and ten other scholarships are administered by the Alumni Society. For information address R. D. Webb, Secretary.

THE ORATORICAL PRIZE, medal to that member of the junior class who composed and delivered the best oration on junior class day of Commencement.

1907, *Roy Henderson Liddell,* Wilcox County.

THE ORATORICAL PRIZE, for the Annual Inter-Literary Society Contest, February 22nd.

1908, *William Ivy Pittman,* Houston County.

SOPHOMORE MEDAL IN DECLAMATION for annual contest, May 1st.

1907, *William Walton Garrett, Jr.,* Jefferson County.

PRIZE FOR BEST DEBATER, a medal given annually by the Board of Trustees to the best debater in the Wirt and Websterian Literary Societies each.

Wirt Society, *Moe Baruchoff Gottlieb,* Macon County; Websterian Society, *William Monroe Howell,* Barbour County.

THE THOMAS ESSAY PRIZE, a gold medal offered by Judge William H. Thomas, of Montgomery, Ala., for the best essay by any undergraduate student of the college. This essay must be written under the supervision of the Department of English.

1907, *Moe Baruchoff Gottlieb,* Macon County.

MUSIC MEDAL.

Homer Waller Wright, Lee County.

BATTALION MEDAL, for best drilled soldier.

1907, *Samuel Arrington Ellsberry,* Montgomery County.

PRIZE FOR BEST DRILLED COMPANY, a sword given by Board of Trustees.

1907, *William Hardie,* Jefferson County.

LIBRARY.

Librarian, JAMES R. RUTLAND.

Assistant in Library, R. H. DRAKE.

A beautiful Carnegie library building of stone and pressed brick is in process of construction. The reading room is 80x40 feet, and the building will be equipped with every convenience. It will be lighted by electricity and heated by steam. The capacity of the stack room is sixty thousand volumes. The library now contains 22,163 bound volumes, including valuable reference and scientific books, with select editions of standard authors, and others suitable for students, carefully and recently selected. It is kept open eight hours daily for the use of students as a reading room, and is thus made an important educational feature.

MUSEUM.

The Museum occupies a large room in the third story. It is provided with suitable cases and is equipped with valuable specimens and models of an instructive character.

EXPENSES.

There is no charge for tuition for a resident of Alabama.

Incidental fee, per session	$ 5.00
Library fee, per session	2.00
Surgeon's fee, per session	5.00
Laundry fee, per session	12.50
	$24.50

These fees are payable on matriculation. *By order of the Trustees no fees can be remitted.*

Board, including lodging, fuel and lights, is furnished at $12.50 to $15.00 per month.

For a non-resident of the State there is a charge of tuition of $20.00 per session, payable on matriculation, in addition to the annual fee payable by all students.

The necessary expenses for a session, not including uniforms or books, are for a resident of Alabama, as follows:

College fees	$ 12.00	$ 12.00
Laundry fees	12.50	12.50
Board, lodging, fuel and lights	112.50	135.00
Total	$137.00	159.50

By special arrangement with the college authorities, Mrs. M. L. Mitchell and Mr. B. T. Blasingame will accommodate students with board, lodging, fuel, etc., for $9.50 per month.

By boarding at one of these houses the necessary expenses may be reduced to $106.50 per session. This estimate does not include the cost of the uniform, about $15.00, or of books, say from $5.00 to $15.00, or the laboratory fees in the higher classes, $5.00.

LABORATORY FEES.

For each student in the junior or senior laboratory in pharmacy, chemistry, electrical, or mechanical engineering, a fee of $5.00 per session is required for each department. This fee is payable *on admission to the laboratory,* and is not remitted.

Special students in laboratory work will pay additional fees for each separate division of work, and will be charged with all material consumed in experiments.

NON-RESIDENT STUDENTS.

Tuition for students, not residents of Alabama, is $20.00 per session, unless remitted by the Trustees to worthy students upon the recommendation of the Faculty.

The remission of this tuition fee to non-resident students will be granted in the form of a free scholarship for the succeeding year, to those who obtain a distinction the preceding year, or who, by reason of merit, are deemed worthy.

This tuition for non-residents is remitted to sons of ministers of the gospel.

HONOR SCHOLARSHIPS.

The following non-resident students were granted, each by reason of special merit in conduct and scholarship during the session of 1907-08, an honor scholarship, which exempted from tuition fees:

Eugene Vernon Camp	Georgia
Benjamin Meyer Goldgar	Georgia
Milton Lothrop, Jr.	Texas
Dennis Markett Moore	Georgia
John Thomas Moore	Georgia
William Carter Oliver	Texas
Robert Edward Lee Paton	Mississippi
John Taylor Postell	Georgia
Orman Nimmons Powell	Georgia
Herman Herbert Schomburg	Georgia
Albert Hodges Van Duzer	Georgia
Robert Wilson Williamson	Tennessee
Chandler Cox Yonge	Florida

UNIFORMS.

A uniform of cadet gray cloth is prescribed, which all undergraduate students are required to wear during the session. The uniforms are made by a contractor, and are of excellent cloth manufactured at the Charlottesville mill. A suit, including cap, costs at present $15.00. It is neat and serviceable, and less expensive than ordinary clothing.

CONTINGENT FEE.

A contingent fee of five dollars is required to be deposited by each student on matriculation to cover any special or general damage to college property for which he may be liable. General damages are assessed on the body of students.

At the close of the session the whole of the contingent fee, or the unexpended balance, is refunded to the student.

AMOUNT OF DEPOSIT.

Fees to be paid on entrance:

Incidental	$ 5.00	
Library	2.00	
Surgeon	5.00	
Contingent	5.00	
Uniform	15.00	
Laundry fee for session	12.50	
For a resident of Alabama	$44.50	44.50
Tuition non-resident		$20.00
For a non-resident		$64.50

Besides the above, the student should deposit with the Treasurer enough to pay for books, one month's board, incidentals, amounting to say $27.50. Hence, a resident of Alabama should deposit with the Treasurer $60.00; a non-resident, $75.00. For a student entering after January 1st, the deposit for laundry fee is seven dollars ($7.00).

FUNDS OF STUDENTS.

Parents and guardians are advised to deposit with the Treasurer of the college all funds desired for sons or wards, whether for regular charges or college fees or board, or for any other purpose. It is the duty of this officer to keep safely all funds placed in his hands, and to pay all expenses incurred by the students, including board, uniform, books, etc.

The college cannot be held responsible for the expenses of a student, unless the funds are deposited under specific instructions from the parent or guardian to the Treasurer. No student should be permitted to have a large amount of pocket money, as it brings only trouble and encourages idleness.

THESIS.

Each applicant for a degree is required to write and submit to the Faculty a thesis, or oration, and read or deliver the same at Commencement, if required by the Faculty.

There may be presented, with the approval of the professor in charge, a carefully written report of special work done in a laboratory, showing independent investigation and discussion of some subject.

It must be given to the Professor of English by the first of May.

The subject must be submitted for approval by January 1st.

LITERARY SOCIETIES.

There are two literary societies connected with the college—the Wirt and the Websterian. Each has a hall in the main building.

These societies hold celebrations on the evenings of Thanksgiving Day and 22d of February. A gentleman, selected by the Faculty, is invited to deliver an address before the Literary Societies at Commencement.

To encourage the literary societies the Trustees have directed that a medal be awarded on Commencement Day to the member of each society who is both efficient and regular in attendance, and who is the best debater. The method of selection is determined by the Faculty.

EXERCISES IN ELOCUTION.

On every Saturday morning, immediately after chapel services, oratorical exercises in declamation and in original orations are conducted by the Professor of English, in the presence of the Faculty and students.

The *first and second terms* the students of the junior and sophomore classes are exercised in original orations and in declamations.

The *second and third terms* the members of the senior class read essays or deliver original orations.

SOCIETY OF THE ALUMNI.

The annual alumni oration is delivered by a member of the society in Langdon Hall, on Alumni Day, Tuesday of Commencement week.

OFFICERS.

Howard M. Hamill, '67, Nashville, Tenn.------------------Orator
Edwin B. Joseph, '97, Montgomery, Ala.------------------President
R. D. Webb, '97, Auburn, Ala.------------Secretary and Treasurer

Vice-Presidents.

John V. Denson, '05------------------------LaFayette, Ala.
J. C. Street, '80----------------------------Opelika, Ala.
R. C. Smith, '91-----------------------------Opelika, Ala.
Champe S. Andrews, '94---------------------New York City.
J. E. D. Shipp, '79-------------------------Americus, Ga.
L. W. Payne '92------------------------------Austin, Tex.
W. H. Negus, '97------------------------Greenville, Miss.
Geo. Dunglinson, '04---------------------Bramwell, W. Va.
B. B. Ross, '81------------------------------Auburn, Ala.
W. K. Terry, '99------------------------Birmingham, Ala.
T. W. Wert, '99-----------------------------Decatur, Ala.
R. apC. Jones, '87----------------------------Selma, Ala.
J. B. Hobdy, '97-------------------------Albertville, Ala.
H. O. Sargent, '01--------------------------Hamilton, Ala.
W. F. Feagin, '92------------------------Montgomery, Ala.
Thos. Bragg, '01-----------------------------Auburn, Ala.
John McDuffie, '04-----------------------River Ridge, Ala.

SURGEON.

The Surgeon is required to be present at the college daily, to visit at their quarters the cadets that are reported sick, and to give all requisite medical attention without other charge than the regular surgeon's fee, paid on entering college.

An infirmary has been established, and will be properly equipped.

LOCATION.

The Institute is situated in the town of Auburn, fifty-nine miles east of Montgomery, on the line of the Western Railroad.

The region is high and healthful, noted for its general good health and freedom from malaria, having an elevation of eight hundred and twenty-six feet above tide-water. By statute of the State the sale of spirituous liquors and the keeping of saloons of any kind are forbidden.

ACADEMIC YEAR.

The academic year for 1908-1909 commences on Wednesday, 2d September, 1908, and ends on Wednesday, 2d June, 1909, which is Commencement Day.

It is divided into three terms. The first term extends from the opening of the session to Friday, December 23rd; the second term begins Thursday, January 5th, and ends March 20th; the third term continues to the close of the session.

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VOL. IV. NO. 1

THE BULLETIN OF THE

ALABAMA POLYTECHNIC INSTITUTE

AUBURN

CATALOGUE
1908-9

ISSUED QUARTERLY
BY THE INSTITUTE
APRIL, 1909.

ENTERED AT POST-OFFICE, AUBURN ALA., AS SECOND-CLASS MATTER

CALENDAR 1909-10.

Session Begins	Wednesday, Sept. 8, 1909
Examination for Admission	Wednesday, Sept. 8, 1909
First Term Begins	Wednesday, Sept. 8, 1909
Mid-Term Examinations	Nov. 1-3, 1909
Literary Society Celebration—Thanksgiving Day	Nov. 25, 1909
First Term Ends	Wednesday, Dec. 22, 1909
Second Term Begins	Tuesday, Jan. 4, 1910
Mid-Term Examinations	Feb. 10-12, 1910
Literary Society Celebration	Tuesday, Feb. 22, 1910
Senior Class Exercises	Tuesday, Feb. 22, 1910
Second Term Ends	Saturday, March 26, 1910
Third Term Begins	Sunday, March 27, 1910
Mid-Term Examinations	April 21-23, 1910
Senior Thesis Reported	Saturday, April 30, 1910
Sophomore Class Exercises	Monday, May 2, 1910
Field Day	Monday, May 2, 1910
Final Examinations Begin	Tuesday, May 24, 1910
Commencement Sermon	Sunday, June 5, 1910
Annual Meeting of Trustees	Monday, June 6, 1910
Junior Class Celebration, 10 A. M.	Monday, June 6, 1910
Military Exercises, 4 P. M.	Monday, June 6, 1910
Festival of Lights, 8 P. M.	Monday, June 6, 1910
Alumni Day	Tuesday, June 7, 1910
Military Exercises, 5 P. M.	Tuesday, June 7, 1910
Senior Celebration, 8 P. M.	Tuesday, June 7, 1910
Commencement Day	Wednesday, June 8, 1910

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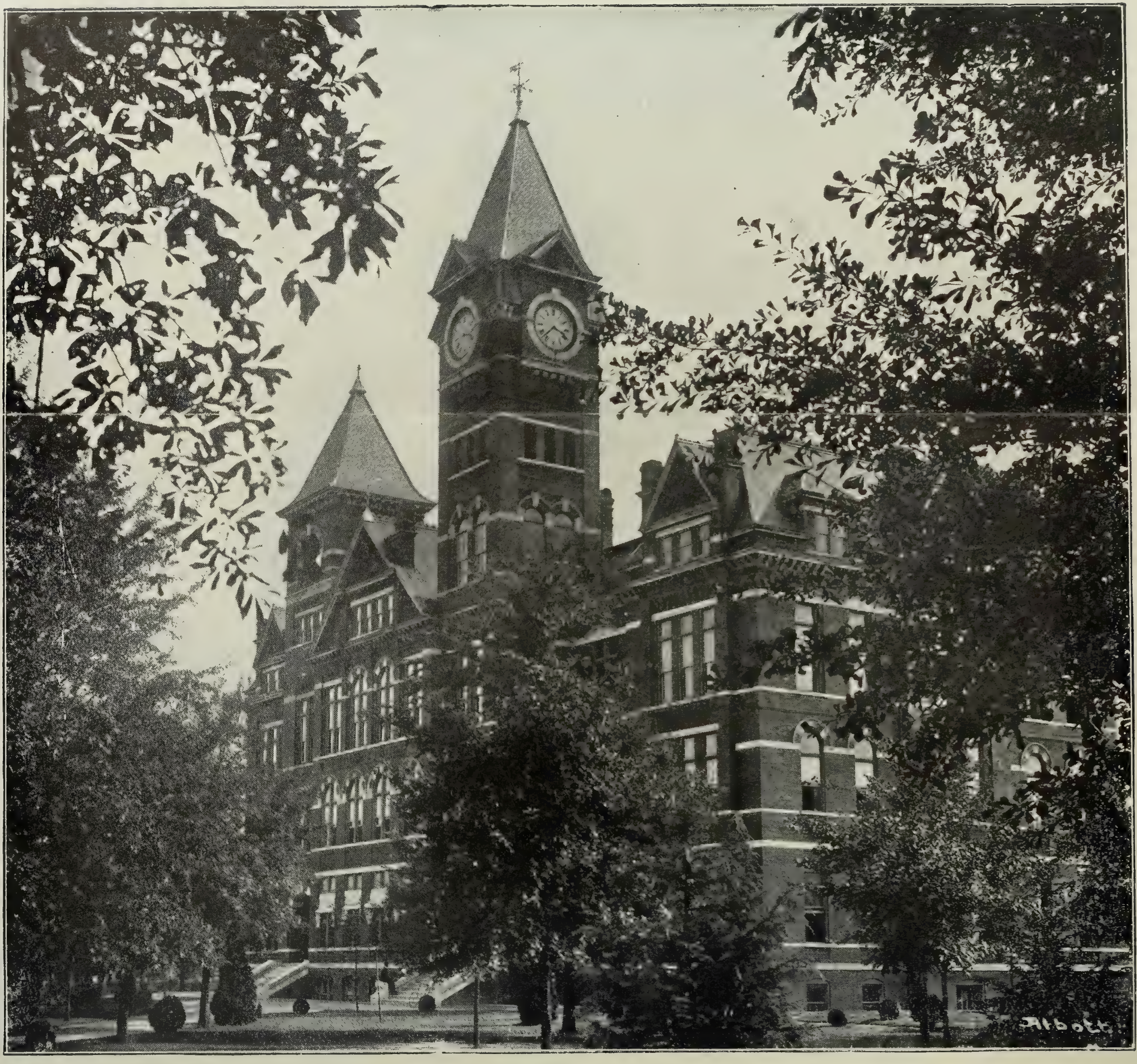

MAIN BUILDING.

CATALOGUE

OF THE

ALABAMA
POLYTECHNIC INSTITUTE

STATE COLLEGE

FOR THE

BENEFIT OF AGRICULTURE AND THE MECHANIC ARTS

AUBURN, ALABAMA

1909

OPELIKA, ALA:
THE POST PUBLISHING COMPANY
1909

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H. C. GUNNELS, Superintendent of Education	*Ex-Officio*

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Wm. C. Davis (*Sixth District*)	Jasper, Ala.
Tancred Betts (*Eighth District*)	Huntsville, Ala.

TERM EXPIRES 1915

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W. K. Terry (*Ninth District*)	Birmingham, Ala
J. S. Frazer (*First District*)	Mobile, Ala.
R. B. Barnes (*Third District*)	Opelika, Ala.

TERM EXPIRES 1919

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N. D. Denson (*Fifth District*)	LaFayette, Ala.
W. F. Feagin (*Seventh District*)	Montgomery, Ala.

M. A. Glenn, Treasurer. J. H. Drake, M. D., Surgeon.
R. W. Burton, Secretary.

Ae 'pH

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Assistant Chemist.

WILLIAM FRANKLIN TURNER, B. S.,
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CARL GILBERT GAUM, B. S.,
Assistant in Drawing.

---

*Resigned

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ORMAN NIMMONS POWELL, B. S.,
Assistant in Civil Engineering.

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Assistant in Mechanic Arts.

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JACOB ALLEN WALKER, B. S.,
Assistant in Latin and History.

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Assistant in Pharmacy.

GEORGE HENRY MARSH, B. S.,
Assistant in Pharmacy.

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Assistant in Architecture.

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Assistant in English and Mathematics.

JAMES GARDNER SOMERVILLE, B. S.,
Assistant in Drawing.

P. F. BAHNSEN, V. S.,
Lecturer on Physical Diagnosis. (Graduate Hanover Veterinary College, Germany.)

J. H. DRAKE, M. D.,
Surgeon.

M. A. GLENN,
Treasurer.

ANNE OGLE SHIVERS,
Assistant Librarian.

---

*Resigned

COMMITTEES OF THE FACULTY

COMMITTEE ON DISCIPLINE.
Professors Ross, Wilmore, Petrie, Dunstan, Mitcham.

COMMITTEE ON ENTRANCE EXAMINATIONS.
Professors Petrie, Wiatt, Crenshaw, Wilson, Webb.

COMMITTEE ON EXAMINATION OF SPECIAL STUDENTS.
Professors Wilmore, Dunstan, Duggar, Miller, Hinds.

COMMITTEE ON PUBLIC LECTURES.
Professors Wilson, Petrie, Wiatt, Dunstan, Southall, Mitcham, Brown.

COMMITTEE ON LIBRARY.
Professors Petrie, Wiatt, Duggar, Wilson, Curtis, Rutland.

COMMITTEE ON ATHLETICS.
Professors Ross, Mitcham, Dunstan, Southall, Curtis, Brown.

COMMITTEE ON GROUNDS AND BUILDINGS.
Professors Wilmore and Mackintosh.

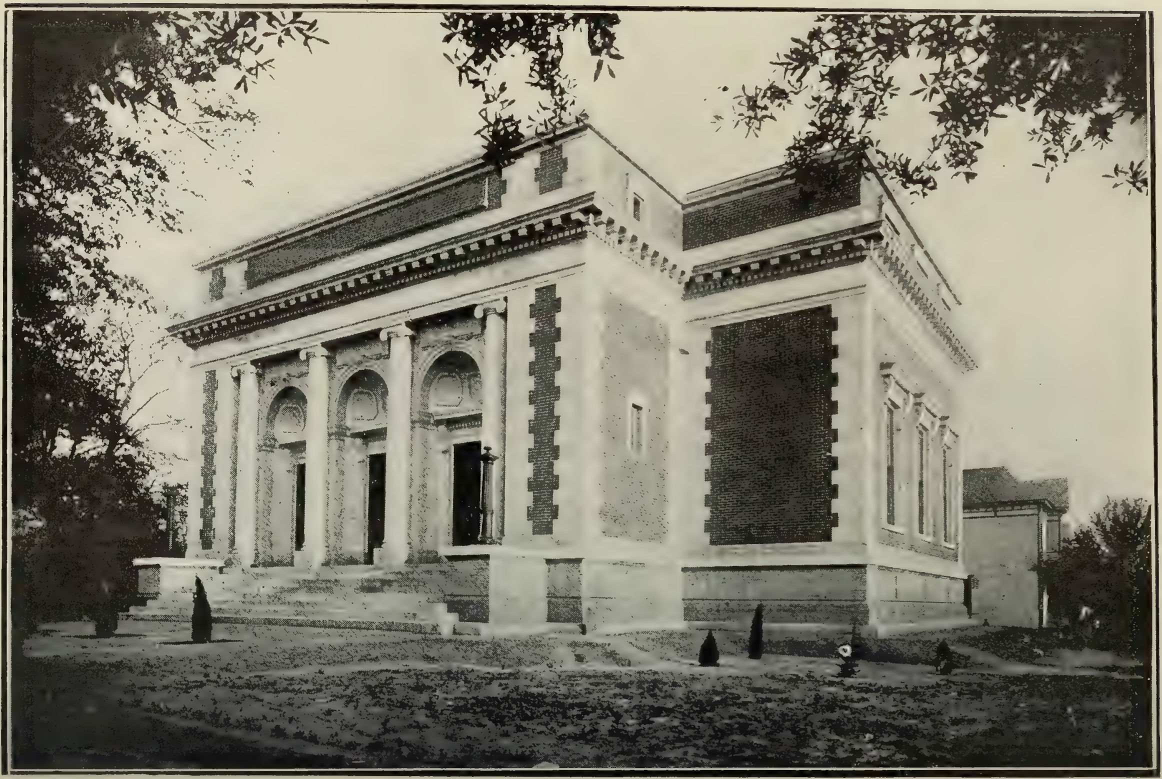
AGRICULTURAL EXPERIMENT STATION

STATION COUNCIL.

Chas C. Thach, M. A., LL. D	President
J. F. Duggar, M. S	Director and Agriculturist
B. B. Ross, M. S	Chemist
C. A. Cary, D. V. M., B. S	Veterinarian and Director Farmers' Institutes
J. T. Anderson, Ph. D	Chemist in Charge of Soil and Crop Investigation
R. S. Mackintosh, B. Agr	Horticulturist
W. E. Hinds, Ph. D	Entomologist
F. E. Lloyd, A. M	Plant Physiologist and Pathologist
C. L. Hare, M. S., M. A	Physiological Chemist
D. T. Gray, A. B., M. S	Animal Industry
A. M. Ransom, M. S., M. A	Associate Chemist

ASSISTANTS.

L. N. Duncan, M. S	Assistant Agriculturist
Thos. Bragg, M. S	Assistant Chemist
E. F. Cauthen, B. S	Superintendent of Farm and Recorder
J. W. Ridgway, B. S	Assistant in Animal Industry
P. F. Williams, B. S	Assistant in Horticulture
N. E. Bell, B. S	Assistant in Chemistry
I. S. McAdory, B. S., D. V. M	Assistant in Veterinary Science
L. E. Case, D. V. M	Assistant in Veterinary Science
W. F. Turner, B. S	Assistant in Entomology



LIBRARY.

The Institute is a distinctive school of science and its applications; being also the State College for the benefit of Agriculture and the Mechanic Arts, established by the State in 1872 by endowing it with the land-grant appropriation made by the United States Congress in 1862.

The leading object of the Institute, in conformity with the act of Congress and the acts of the State Legislature, is to teach the principles and applications of science.

In its course of instruction it gives prominence to the sciences and their applications, especially to those that relate to agriculture and the mechanic arts; and at the same time the discipline and liberal education obtained by the study of language and other sciences are not neglected.

All students are required to study the English language. The Latin, French, and German languages are also taught, and opportunity for their study is offered to students in any course.

The special and technical instruction given is thus based on a sound, general education.

In its different courses of education, work of great value to the youth of the State is accomplished by fitting them by a thorough science-discipline, in which manual training in the lower classes is made a prominent feature, for the successful and honorable performance of the responsible duties of life.

While every attention is given to the mental discipline of the students in endeavoring to train them to habits of accurate scientific thought, and thus to qualify them for the duties of life, their moral and Christian training will always constitute the prominent care and thought of the faculty. The Institute thus endeavors to educate as well as instruct, to form character as well as give information of value.

LABORATORIES AND FACILITIES FOR INSTRUCTION

The Institute possesses facilities for giving laboratory instruction in English, history, Latin, and the following departments of applied science:

I. IN CIVIL ENGINEERING.

A flourishing department of civil engineering has existed in the Institute since its foundation in 1872. The department occupies four rooms; office, lecture room, and spacious drawing rooms. A large amount of practical work is given the students of this department in field work.

Summer course.—An attendance upon two sessions of the four weeks' summer course, which offers practical work in plane and higher surveying and in engineering, is required of the students taking civil engineering and mining engineering.

The department is equipped with seven transits, six wye levels, one Dumpy level, one surveyor's compass, one railroad compass, one plane table, an ample supply of tapes, chains, level and transit rods, hand instruments, and other necessary equipment. For the summer work, a complete camping outfit has been purchased, consisting of fourteen wall tents, each accommodating four students, forty folding camp cots, fifty camp stools, cooking utensils, dishes, etc.

II. IN ELECTRICAL ENGINEERING.

In the new engineering building three rooms and an office are used by the department of electrical engineering. One of the rooms is a class room, another is used for the telephone laboratory, and the third is a laboratory for electrical measurements.

The wiring in this building is arranged so that alternating and direct currents of various voltages for power, lighting, and experimental purposes can be delivered to any room.

In connection with the laboratories there is installed a repair and construction shop furnished with a variety of hand tools and with power driven machine tools.

(*a*) The electrical measurement laboratory is furnished with a variety of resistance boxes, bridges, galvanometers, standard cells, condensers, etc., as well as two photometers. In addition to the laboratory instruments proper, just noted, the department is provided with representatives of most of the types of commercial ammeters, voltmeters, and indicating and recording wattmeters, for A. C. and D. C. work. There is also a 30,000 volt transformer for break down tests of insulating materials.

(*b*) The telephone laboratory is provided with a full line of telephonic apparatus, phones, relays, condensers, plugs, jacks, lamp and other signals, etc., representative of the Bell and a number of independent telephone companies.

Single pieces are so mounted that they can be connected up in any desired manner and thus the connections of any particular system can be made up and tested out.

(*c*) The dynamo laboratory occupies another building. Power for experimental work in the dynamo laboratory is furnished by a 60 horse power, automatic, side crank, Harrisburg engine, belted to line shaft with clutch pulleys, a 15 horse power, variable speed, Westinghouse Type F. induction motor, with controller and special resistance grids, so that the motor may be operated under full load on any controller notch, and a 25 horse power Atlas engine.

The Atlas engine is equipped with a governor which permits the speed to be varied within wide limits without stopping the engine.

This laboratory is equipped with a large number of D. C. and A. C. generators, motors, and other appliances especially adapted for experimental work. In addition, the equipment of the power plant is so arranged as to be readily available for purposes of instruction and investigation.

III. IN MECHANICAL ENGINEERING.

A very important adjunct to the text-book work in the mechanical engineering course is the laboratory or experimental work that the students do during the senior year.

The work in heat and steam engineering is carried on in the power house, and the following apparatus is available for instruction: A 35 horse power cross compound engine, especially arranged for experimental work; a Wheeler condenser, and a Worthington air pump and circulating pump; a 160 horse power American Ball angle compound engine; a 125 horse power tandem compound Buckeye engine; a 60 horse power Harrisburg simple engine; a 25 horse power Harris–Corliss engine; a 20 horse power Atlas engine; a 200 horse power Stirling boiler; a 100 horse power Heine boiler; a Deane duplex steam pump; a 4 1–2 horse power gasoline engine; a 2 horse power two cycle gasoline engine; a 2 1–2 horse power kerosene engine; an Ericsson hot air engine; a New York air pump; a Westinghouse air pump; an Ingersoll–Sargent air compressor; an electric headlight engine; indicators, calorimeters, thermometers, pyrometers, scales, steam gauges, and apparatus for testing steam gauges.

A room on the first floor of Engineering Hall has been fitted up for a laboratory for the testing of materials. In it are installed a Riehle Brothers' testing machine arranged for making transverse, compression, and tension tests, and micrometer apparatus for measuring the deformation of the specimen under test. There is also provided a cement testing outfit consisting of a testing machine, sieves, briquette moulds, boiler and other apparatus for testing the strength, setting properties, fineness, and specific gravity of cement.

On the third floor of Engineering Hall a laboratory has been fitted up for testing fuels, gases and lubricants. The present equipment consists of a fuel calorimeter to determine the heating value of fuels, complete apparatus for making the proximate analysis of coal, apparatus for collecting and testing flue and furnace gases, and apparatus for determining the viscosity, the specific gravity, the flash point and other properties of lubricating oils. A small electric motor has been installed to furnish power for grinding samples, furnishing air blast, stirring, and other such work.

IV. IN MECHANIC ARTS.

The instruction in shop work is used as an auxiliary in technical education, and as a school of manual training in the arts that constitute the foundation of most industrial pursuits. The work performed by the students is instructive in character, and is intended to give the greatest amount of instruction in principle with the least repetition of operations, and the smallest consumption of time. The work is executed from drawings, and the instructor in charge of the classes makes the lessons before the class, or gives such specific directions as may be necessary to enable the student to make them. This is supplemented by individual instruction.

All students in the freshman class take this shop work, three periods a week, each period being two hours long. The sophomore class takes two periods a week. The purpose is not to teach a trade, but to train the eye, the hand, and the mind to more perfect co-operation, a training which will be of value in any pursuit in life. This training involves the principles at the foundation of all trades, of equal value to a student who wishes afterwards to learn a trade.

Three-phase electric motors are used for driving the different shops, the motors receiving current from the large alternator in the dynamo room.

(*a*) The wood department is located in a room 90x50 feet, and is provided with a surface planer, a variety saw, a swing cut-off saw, a boring machine, and a grindstone. There are, in addition, thirty benches for carpentry work, with the necessary tools.

(*b*) The wood turning and pattern shop is located in a commodious room 40x60 feet, in the second story of the new power house. It is equipped with twenty-eight wood turning lathes, a grindstone, a band saw, a buzz planer, a pattern maker's lathe, a double circular saw, and a surface planer.

In each of these departments special tools for occasional use are kept in a tool room for the purpose.

In addition to the regular carpentry tools in the benches, each student is supplied with a set of chisels, and plane irons, with a locker to keep them in, and is held responsible for their care and condition.

(*c*) The forge shop is equipped with twenty-four down draft forges, with anvils, hammers, sledges, and other tools necessary for blacksmith work, including a punch and shear for cutting and punching iron, and a blacksmith drill. The blast is supplied by a blower which is also used for supplying the foundry cupola with blast. The smoke from the forges is removed through underground passages by a 60–inch exhaust fan and discharged into the chimney.

(*d*) The foundry is equipped with a 23–inch Colliau cupola, having a melting capacity of 2,000 pounds of iron per hour, the necessary molding tools for bench and floor work, benches, a core oven, ladles, molding flasks, a foundry crane, etc. There is also a brass furnace with crucibles, crucible tongs, and the appliances necessary for making brass castings.

(*e*) The machine–shop is a room 30x100 feet, and is equipped with nine 14–inch, two 16-inch, and one 18–inch engine lathes, one 10–inch speed lathe, a 20–inch drill press, a 10–inch sensitive drill, a 16–inch shaper, two iron planers, one 22-inch by 5-feet and the other 26–inch by 6–feet, a back geared universal milling machine with vertical milling attachment, a water tool grinder, a bench grinder, a universal grinding machine, a universal cutter and reamer grinder, a twist drill grinder, and a power hack saw. Three of the engine lathes have compound rests, three have taper attachments, and one is fitted with a turret and a large number of special tools and fixtures which practically convert it into a manufacturing lathe, and serve to illustrate the methods of manufacture by duplicate parts.

For chipping and filing, eighteen benches are fitted with vises and each student is supplied with hammer, chisels, files, and such other tools as he may need, and a locker in which to keep them. A gasoline engine is installed in one end of the shop, and is used for driving at times when the steam plant is not running.

The tool room is supplied with general machinist tools, such as chucks, drills, reamers, taps, dies, gauges, jigs, and special tools. A convenient room is supplied with lockers for keeping clothes, and basins supplied with hot and cold water for the use of the students. The different shops are equipped with electric lamps, and current is furnished when necessary.

V. IN MINING ENGINEERING AND MINERALOGY.

The department of mining and geology occupies the west half of the new three-story engineering building. The third floor is divided into two well lighted rooms: (1) for lectures and recitations; (2) for draughting. The lecture room is provided with seats to accommodate sixty-four students. In this room is a screen and an electric stereopticon lantern for illustrating lectures. The draughting room has a capacity for thirty. Here the student receives instruction in mechanical draughting and in the calculation and plotting of field notes.

The second story is occupied by the professor's office and the mineralogical laboratory. The latter, like each of the two rooms on the third floor, occupies a floor space of about 960 square feet. In this laboratory there are accommodations for thirty-six. Each student is supplied with a blow pipe outfit, a drawer, and a locker, and each desk is piped for gas. The laboratory is equipped with a good type collection of minerals and lithological specimens as well as working specimens. There is a collection of fossils and casts illustrating the subject of historical geology. A very useful set of about 100 wooden models of crystals has just been imported. The geological department has several specific gravity balances of various kinds, contact and reflecting goniometers, a petrogaphical microscope, a good collection of slides both for the petrographical microscope, and the stereopticon lantern.

VI. ORE DRESSING.

The ground floor is occupied entirely by the metallurgical laboratory. This laboratory is well equipped with ore dressing plants. The concentrating plant consists of a gyratory crusher, two sets of roll crushers, two bucket elevators, four trommels or revolving screens, two classifiers, four Hartz jigs, and a seven-foot Wilfley concentrating table.

The stamp mill is of the full size Nissen type, circular discharge and interior amalgamating plate. The outside amalgamating plate is of full size, being ten feet long. The stamp mill and concentrating plant are fed from their respective bins by two different types of automatic feed. The ore before entering the bin, is crushed to proper size by a Blake jaw crusher. The Model Cyanide plant illustrates the bleaching department of the cyanide process and the extractor box work. It consists of one solution tank, two sand tanks with false bottoms and filters, one gold tank, and a set of extractor box compartments of the up-flow type.

Besides the equipment already mentioned there is an automatic sampler. The cement floor in this department gives a good surface for illustrating coning and quartering in the process of hand sampling.

A twenty horse power motor is the source of power for this laboratory. Shafting, belting, and gears of various kinds transmit the power to the various machines so that a large variety of mechanism is illustrated.

VII. IN ARCHITECTURE.

The department of architecture is located in three well lighted rooms in the Main Building. A floor space of 2,250 square feet is occupied by a lecture room, 25x 30, a large draughting room 30x35, and a library, office, and special draughting room, 15x30, all connected by doors. These rooms are well furnished with large, substantial drawing tables and extra tables for freehand drawing, fixtures and additional equipment; a collection of selected plaster casts of classic sculpture and architectural details, a large number of architects' drawings and signed original plates, and several hundred examples of freehand drawings of various sorts; a library of standard works and portfolios of plates illustrating details of decoration and composition; 250 lantern slides and many photographs of notable monuments of architecture; manufacturers' samples and catalogues; and various current journals devoted to architecture and the allied arts.

VIII. IN MECHANICAL DRAWING AND MACHINE DESIGN.

The department of mechanical drawing and machine design is supplied with equipment for teaching mechanical drawing, descriptive geometry, kinematics, and machine design.

A convenient cabinet is supplied with a complete set of Schroeder's descriptive geometry models for demonstrating the principles of descriptive geometry and mechanical drawing. A small reference library and a library of selected catalogues of manufacturers, which is being established for the use of students in advanced machine design, occupy a suitable case. A Beck vertical wall file, 36 in. x 48 in., for filing commercial blue-prints, is filled with selected blue-prints furnished by prominent manufacturers, and is made use of by students in machine design.

A number of kinematic models and a large collection of engineering specialties, sectioned to show interior, which were donated by the various manufacturers, occupy a sectional case, and are used in elementary work in machine design and mechanical drawing. The filing envelopes, which contain the students' drawings, are kept in alphabetical arrangement in a case of drawers.

This department is equipped with an outfit for making blue-prints, consisting of two sun printing frames—18 in. x 24 in. and 30 in. x 42 in., each mounted on a car and track, and suitable conveniences for washing and drying the prints.

All students in the lower classes are required to take drawing, a study which tends to discipline the mind, as well as to train the eye and hand to accuracy of observation and execution. Four large well-lighted drawing rooms, which will accommodate (at one period) two hundred and fifty students, are provided with tables, lock boxes, etc. The drawing rooms have been equipped with one hundred and fifty new drawing tables of the most modern pattern.

IX. IN PRACTICAL CHEMISTRY.

The chemical laboratory is supplied with modern apparatus, and in its equipment affords excellent facilities for instruction in practical chemistry and for investigation.

The investigations that are undertaken in this laboratory by scientific experts, in connection with the work of the agricultural experiment station, are of especial value to advanced students, and afford them unusual opportunities to learn the methods of scientific research.

The building contains a large general laboratory, that accommodates sixty students, a special laboratory for seniors that will accommodate thirty students, a lecture room with a capacity for one hundred and fifty seats, and nine other rooms, all appropriated to instruction and research in chemistry.

The State chemical laboratory for the official analysis of fertilizers is connected with the department.

X. IN AGRICULTURE.

The agricultural experiment station, established in connection with the Institute, where experiments and scientific investigations relating to agriculture are daily made, affords unusual opportunities to students to become familiar with agriculture, its defects and remedies.

The students of agriculture accompany the professors in the field, where lectures are delivered in the presence of the objects discussed, and during the year exercises in practical agriculture of an educational character are given the students who enter upon this course of study.

The farm contains 304 acres.

XI. IN BOTANY AND BIOLOGY.

The laboratory for plant morphology and histology adjoins the lecture room of the professor, and is well equipped for investigation along these lines. The experimental work in plant physiology and pathology is conducted by the students in the laboratory and adjacent greenhouse, both of which are being rapidly equipped and altered to accommodate this important line of work.

A botanic garden is being developed and it is the intention to add as rapidly as possible representatives of the native flora of this state, and a good collection of the native medicinal plants. In this manner it is planned to secure from the garden its maximum assistance in the work of instruction. Special work in plant breeding and biometry will also be conducted in this garden.

XII. IN PHARMACY.

The laboratory of this department occupies the first and second floors of the annex to the chemical laboratory, and is provided with a sufficient supply of drugs and apparatus necessary for instruction in pharmaceutical preparations. The equipment of the laboratory includes a Laurent polariscope; a Pulfrich refractometer; a vacuum distilling and drying apparatus, consisting of 1–2 horse power air pump, vacuum chamber, condenser, and Bruhl receiver for fractional distillation under diminished pressure, a three-horse power electric motor, a complete outfit for organic combustion work, and three chemical balances.

The new pharmaceutical laboratory on the basement floor of the pharmaceutical building, is fitted with steam, and has a full equipment for research work in pharmaceutical chemistry.

The students work in the laboratory with the professor from five to eight hours, six days in the week.

The facilities are increased as means are available.

XIII. IN PHYSIOLOGY AND VETERINARY SCIENCE.

The veterinary department occupies a separate two-story building with nine rooms. It is provided with lecture room, office, working and operating rooms for clinical practice, thoroughly equipped laboratories for work in bacteriology, milk and meat inspection, and with museum containing skeletons of the domestic animals for instruction. Free clinics are given every Saturday for the benefit of the students in veterinary science.

There is a separate dissecting room with cement floor and north roof light, constructed especially for this department. This laboratory is used by the professor and students each afternoon for three months.

XIV. IN HORTICULTURE.

A plot of twenty acres is devoted to orchards, vegetables, fruits, flowers, and grapes. There are well appointed greenhouses, fitted with modern apparatus for ventilation, heat, etc. Accurate experiments are conducted in this department in fruit growing and the culture of the various vegetables adapted to this climate. Students are given in this laboratory practical instruction in grafting, budding, spraying, fertilization, gathering and marketing crops. Valuable co-operative work with the United States Agricultural Department has been undertaken in this department.

XV. IN ENTOMOLOGY.

The completion of the new agricultural building makes excellent provision for laboratory work in this subject. The department is fairly well equipped with apparatus for the microscopic work in entomological subjects. An excellent equipment for photographic and photomicrographic work is provided and instruction in these subjects will be given as occasion may arise. The laboratory work is closely related to the lecture work in most cases. Special attention is given to the structure and classification of insects, designed especially to familiarize the student with the principal groups into which insects are divided, and to give a basis for the selection of a proper method of treatment for their control.

The laboratory work includes also practical exercises in the preparation of the most important insecticides with proper types of construction in apparatus for applying various insecticides, and in a general way, making the student familiar with practical insecticidal work. There are also various exercises in the collection of insects and in the study of various pests which occur in the vicinity.

A reference library containing many general works upon entomology and important publications of the national bureau of entomology and of the state experiment stations is always accessible to students.

XVI. IN ANIMAL INDUSTRY.

The animal industry farm contains about 260 acres; upon this farm is a dairy barn, which accommodates eighteen cows, and a beef cattle shed. The students visit the barns and sheds with the instructors and are thus afforded an opportunity to study the various breeds of live stock and to do stock judging work. In addition to the pure breeds of cattle, sheep and swine upon the farm, there are always graded and scrub animals, which are used in the experimental work in feeding, breeding, etc. All of this stock is used in instructional work. The sophomore students are given daily laboratory work in which they learn the use of the Babcock tester and of various types of cream separators; they are also taught the methods of making acidity tests, the use of the lactometer, how to make and judge butter, etc. During the second term of the sophomore year the students are given practice in scoring and judging dairy and beef cattle, sheep, and swine. During the junior year instruction in judging horses and mules is given.

XVII. IN HISTORY AND ENGLISH.

All advanced work in history is conducted by the laboratory method. This plan has been successfully employed in the junior, the senior, and the graduate classes. A large and well lighted room has been set apart for this work in the new library building, where all the resources of the rapidly growing library are easily accessible. This room is equipped with maps, diagrams, charts, and suitable tables and chairs. The library is a depository for all government publications. These and other books on American history, with which it is well supplied, offer abundant material for research work in the history of our country. The publications collected by the experiment station constitute valuable material for study in industrial history.

Opportunity is also offered for laboratory work in English in the sophomore class. At present this is conducted in the same room as the historical research, and all the equipment of that department and of the general library is accessible. This affords an excellent opportunity for independent study of the various forms of discourse, narrative, descriptive, expository, and argumentative.

XVIII. IN PHYSICS.

The physical laboratory occupies two rooms, one of these being permanently darkened for experimental work in light. It is equipped with numerous standard instruments of precision, such as verniers, micrometers, cathetometers, a horizontal comparator, a Kater's revision pendulum, balances, etc., and a quantity of minor apparatus.

Recently there have been added a concave grating spectograph, a large induction coil of 12-inch spark, and other apparatus of value.

XIX. MILITARY TACTICS.

Instruction in this department is given in conformity with the act of Congress. Students receive the benefit of regular military drill, and, in addition, the military system is used as a means of enforcing discipline and securing good order, promptness, and regularity in the performance of academic duties.

This department is supplied with cadet rifles and accoutrements for the corps.

BUILDINGS.

The frontispiece is a representation of the Main Building. It is 160x71 feet, and contains forty-five rooms. This building is not used for dormitories for students, but is appropriated to purposes of instruction and investigation.

It contains lecture rooms and offices of professors, museum, armory, etc.

LANGDON HALL.

This is a two-story building, 90x50 feet. The second story is the audience hall, used for commencement and other public occasions.

ELECTRICAL AND MECHANICAL LABORATORIES.

The first story of Langdon Hall is appropriated to the laboratory of first year wood work in mechanic arts.

The machine shop, forge shop, foundry, and boilers are installed each in separate buildings. A handsome new building, two stories in height, pressed brick and stone trimmings, has been recently constructed for occupation by the power plant on the first floor and by the pattern making department on the second floor. The dynamo laboratory occupies a separate building.

ENGINEERING HALL.

The Engineering Hall is a handsome three-story building, with twelve large lecture and laboratory rooms. It is constructed of pressed brick with white stone trimmings. It harmonizes well with the group of college buildings.

THE CHEMICAL LABORATORY.

As shown on the opposite page, this is a two-story structure, 40x60 feet, with a rear projection, 35x60 feet, of one story and basement, and contains eight rooms. The exterior is of pressed brick, with cut stone trimmings, and terra cotta ornamentation.

In the basement are ample accommodations for assaying and storage.

The main laboratory will accommodate sixty students and con-

tains improved working tables, with water, gas, and every necessary appliance for chemical work.

The laboratory for advanced work in chemistry will accommodate thirty students, and is equipped in the same manner. Adjoining this are two rooms which are used respectively as a balance room, and a room for work with spectroscope, polariscope, etc.

The second story contains a lecture room with seats and tablets for one hundred and twenty students. Around the lecture room are cases containing crude and manufactured products, illustrating agricultural and mechanical chemistry, prominent subjects taught in the institution.

ANNEX TO CHEMICAL LABORATORY.

This is a three-story brick building, containing rooms for pharmacy and drawing.

The chemical laboratory for the Agricultural Experiment Station occupies a building 60x26 feet, and is appropriated exclusively for chemical investigation and research, and not for instruction.

DINING HALL.

The Otis D. Smith Dining Hall, constructed of stone and pressed brick, is two stories in height, and one hundred and forty feet in length. It will accommodate three hundred in the dining hall, and forty in the dormitories above. The style is semi-colonial, and is quite attractive.

LIBRARY BUILDING.

The new library building is a handsome structure of classical outline, monumental in its general effect. It is presented in an accompanying cut.

AGRICULTURAL BUILDING.

There is in process of erection a handsome and commodious building for the departments of (1) agriculture, (2) horticulture, (3) botany, (4) entomology, and (5) animal industry, together with a separate set of buildings for practical work in each of these departments. It is the general opinion that there is no superior, if equal, group of buildings for agricultural purposes in the South. The building is three stories in height and is constructed of pressed brick with stone trimmings. This building will be ready for occupation the session of 1909-10.

GRADUATES IN 1908

CLASS OF 1908

HONORS.

Members of the senior class who attain distinction with a grade of 95 per cent. are Graduates with Highest Honor. Those who attain a distinction with a grade of 90 per cent. and less than 95 per cent., are Graduates with Honor. Those who attain less than 90 per cent. and more than 60 per cent. are Graduates.

DEGREES.

BACHELOR OF SCIENCE

GRADUATES.

Robert Gayle Adams	Clarke
Henry Winfield Allen	Marengo
Nicholas Lawrence Baker	Lee
Carl Edward Barker	Dallas
Stephen Radford Batson	Jefferson
Clarence Medley Bland	Dallas
Ralph Upshaw Blasingame	Lee
Leon Gilmore Brooks	Escambia
Nathan Booker Buchanan	Madison
David King Caldwell	Jackson
Eugene Vernon Camp	Georgia
Charles Leonard Chambers	Jefferson
Charles Clifford Chatley	Jefferson
Augustus Kirby Clements	Lee
Littleberry Calhoun Collins	Hale
George McCown Cook	Lee
Clarence Winston Cooper	Calhoun
Julian Jarnigan Culver	Lee
J. D. Curtis, Jr.	Escambia
Edward Sentle Deshazo	Shelby
Samuel Cellner Dreyfus	Montgomery
Thomas Bailey Dryer	Jefferson
George Luther Dunn	Henry
Karl Savary Elebash	Dallas
Macon Carmichael Ellis	Montgomery
Samuel Arrington Ellsberry	Montgomery
William Edward Elsberry, Jr.	Elmore
Jacie Lee Esslinger	Madison
Ralph Brunson Everett	Georgia
Charles Edward Fort, Jr.	Dallas
Carl Gilbert Gaum	Jefferson

Carleton Bartlett Gibson, Jr.	Georgia
DeWitt Gibson	Jefferson
Stuart Leland Green	Mobile
Roe Preston Greer	Perry
Finley McCorvey Grissett	Escambia
Newton McCraw Haralson	Dallas
Andrew Johnston Hawkins	Jefferson
Robert Edward Hodnette	Macon
Allen Glover Holder, Jr.	Clarke
Howard Holleman	Georgia
William Robert Holley	Henry
Thomas Alexander Johnston	Mobile
George Henry Marsh	Pike
Daniel John Meador, Jr.	Marengo
Goldie Emily Miller	Blount
James Augustus Morgan	Cleburne
William Lee Newberry	Jefferson
Carl Dozier Pace	Calhoun
Marion Curtis Parmer	Lowndes
Edwin Steele Partridge	Mobile
Wallace Bruce Paterson	Montgomery
Orman Nimmons Powell	Georgia
Walker Reynolds	Calhoun
Obie Riddle	Coosa
Albert Price Rogers	Marengo
Herman Herbert Schomburg	Georgia
Francis Minor Shepard	Mobile
James Gardner Somerville	Pickens
Paul Clinton Sorsby	Jefferson
Foster Webb Stanley	Butler
Clarence Brittan Stillman	Jefferson
Penrose Vass Stout	Montgomery
Grover Cleveland Walker	Coosa
Dessie Chlorine Ward	Lee
Henry Jones Weiss, Jr.	Jefferson
Oroon Datus Whitaker	Lee
William Edgar White	Lee
Daniel Elmer Wilkinson	Covington
Ira Edwin Wilks	Crenshaw
Carlton Adams Wilmore	Indiana
William Redding Winship	Georgia
Sidney Harvey Winslow	Morgan
Samuel Wolff	Montgomery
Charles Williamson Woodruff	Jefferson

GRADUATES WITH HONOR.

Clyde McNeel Howard	Autauga
Frances Marion Knapp	Lee
Roy Henderson Liddell	Wilcox
Guy Fleming Lipscomb	Marengo
Charles Terrell Porter	Talladega

James Lister Skinner	Lee
Olin Conway Skinner	Lee
Thomas Washington Smith	Fayette
Jacob Allen Walker	Tallapoosa

GRADUATE WITH HIGHEST HONOR.

John Thomas Moore, Jr.	Georgia

POST-GRADUATE DEGREES.

MASTER OF SCIENCE

Elva Leland Cooper	Lee
Ellis Madison Duncan	Jefferson
Ward Giltner	Lee
William Madison Lewallen	Lee
Roland Eugene Stone	Lee
Thomas McCottry Williams	Lowndes
Evans Beauchamp Wood	Pike

MASTER OF SCIENCE IN PHARMACEUTICAL CHEMISTRY.

John Cameron Dow	Barbour

MECHANICAL ENGINEER.

Charles Robert Hixon	Bullock
George Griffin Hughes	Marion

CIVIL ENGINEER.

Adie Goggans Walker	Coosa

DISTINGUISHED STUDENTS

DISTINCTIONS.

Students who receive a grade of 90 per cent. and less than 95 per cent. in three studies in the freshman class, in four in the sophomore class, in five in the junior class, and in six in the senior class, are distinguished for excellence in scholarship, and are awarded Certificates of Distinction. Those who receive a grade above 95 per cent. are awarded Certificates of Highest Distinction.

FRESHMAN CLASS.

DISTINCTION.

William Wrenshall Alexander	Missouri
William Wray Boyd	Montgomery
Otis Gilmer Clements	Lee
Lewis Pritchett Fort	Dallas
Thomas Morris Francis	Chambers
Robert Knox Greene	Jefferson
Arthur Zellers Heard	Lee
Harry McCrorie Johnstone	Jefferson
Grafton Lothrop	Texas
John Robert McCaghren	Jefferson
Earl Hill McCowen	Georgia
Jemison Mims Moseley	Dallas
Clarence Thomas Nichols	Madison
Wales McIntosh Perdue	Jefferson
Charles Winn Williams	Calhoun

HIGHEST DISTINCTION.

John Eayres Davis	Mobile
Edmund Fay Pearce	Autauga
Richard Anderson Stratford	Russell

SOPHOMORE CLASS.

DISTINCTION.

Dudley Murfee Clements	Lee
Louis Breitenbach Ehrlich	Georgia
Jesse Eugene Grady	Covington
William Augustus Harman	Georgia
James Parks Hutcheson	Tallapoosa
John Judson Keyes	Limestone
Milton Lothrop	Texas
William Alonzo McIntosh	Tallapoosa
Roy Worsham Moore	Georgia
Arthur Samford Noble, Jr.	Elmore
Frank Ordway	Tennessee
Parker Preston Powell	Choctaw

James Freeland Reeves	Barbour
Malcolm Alexander Smith, Jr.	Autauga
John Morris Spearman	Walker
Edwin Ray Stauffacher	Georgia
John Edward Walker	Tallapoosa
Benjamin Weil	Jefferson

HIGHEST DISTINCTION.

Lawrence Kelly	Montgomery
William Carter Oliver	Texas

SPECIAL STUDENTS

DISTINCTION.

Thurston Dupuis Futch	Florida
E. Tandy Hallman	Talladega

JUNIOR CLASS

DISTINCTION.

Lawrence Adler	Calhoun
Chester Dewey Allis, Jr.	Jefferson
Walter Langdon Barker	Montgomery
Emmett Eason Binford	Lee
Harry Jamison Chatterton	Limestone
Hattie Delia Finley	Blount
Benjamin Meyer Goldgar	Georgia
James Gray Hanlin	Colbert
John Belton Hodges	Marion
Charles Roman Kuchinski	Missouri
Edward William Lind	Jefferson
Ray Meade	Jefferson
James Weston Moore	Jefferson
Herman Clarence Nixon	Calhoun
Schuyler Harris Richardson	Limestone
Charles BPure Sullivan	Tallapoosa
Iralee Whitaker	Lee

HIGHEST DISTINCTION.

Thomas Beasley	Lee
Josiah Whittaker Powell	Lowndes
James Grey Stelzenmuller	Baldwin

CATALOGUE OF STUDENTS

FOR SESSION 1908-1909

GRADUATE STUDENTS.

Nicholas Lawrence Baker	Lee
Ralph Upshaw Blasingame	Lee
Nathaniel Booker Buchanan	Madison
Julian Jarnigan Culver	Lee
Carl Gilbert Gaum	Jefferson
Robert Edward Hodnette	Macon
Clyde McNeel Howard	Autauga
Charles Mell Hudson	Lee
Guy Fleming Lipscomb	Marengo
George Henry Marsh	Pike
Orman Nimmons Powell	Georgia
Walker Reynolds	Calhoun
Joseph Wilder Ridgway	Mississippi
James Lister Skinner	Lee
Olin Conway Skinner	Lee
James Gardner Somerville	Pickens
Penrose Vass Stout	Montgomery
Ernest Wood Thornton	Talladega
Jacob Allen Walker	Tallapoosa
William Francis Ward	Lee
Oroon Datus Whitaker	Lee
William Edgar White	Lee
Carlton Adams Wilmore	Indiana
William Redding Winship	Georgia
James Alto York	Dale

SENIOR CLASS.

Walter Clarence Abbott	Lee
Lawrence Adler	Calhoun
Chester Dewey Allis, Jr.	Jefferson
Walter Langdon Barker	Montgomery
Russell Newton Bean	Cleburne
Thomas Beasley	Lee
Edward Chambers Betts	Madison
Emmett Eason Binford	Lee

George Shields Bishop	Colbert
Austin Franklin Jefferson Boyd	Sumter
Orrin Brown, Jr.	Lee
Richard Alva Burleson	Marengo
Samuel Welch Caldwell	Lee
Lano Cantrell	Marion
Ralph Carlisle	Jefferson
William Julian Carter	Marengo
Harry Jamison Chatterton	Limestone
Richard Bonner Cheatham	Jefferson
Walter Stanley Childs	Georgia
Albert Lionel Clothier	Mobile
George Edwin Clower	Lee
Holland Eugene Cox	Jefferson
Harry George Culverhouse	Jefferson
Smith Coffee Daniell	Mississippi
Charles Jefferson Davis, Jr.	Florida
William Soloman Dennis	Pike
Daniel Jackson Duffee	Walker
Joseph DuBrutz Eagar, Jr.	Tennessee
Robert Brooke Ellyson	Mobile
Hattie Delia Finley	Blount
John Treutlen Foy	Barbour
Clarence Edward Francis	Chambers
William Wall Garrett	Elmore
William Walton Garrett, Jr.	Jefferson
Oakley Mills Geibel	Montgomery
Gilbert Graffenreid Glover	Jefferson
Benjamin Meyer Goldgar	Georgia
Moe Baruchoff Gottlieb	Macon
Herman Grimes	Wilcox
William D. Hammack	Georgia
James Gray Hanlin	Colbert
Benjamin Edward Harris	Jefferson
Elmer Arthur Haynie	Lee
Daniel Herren	Elmore
John Belton Hodges	Marion
James Bradley Holman	Wilcox
Lewis Henry Hubbard	Montgomery
William E. Hudmon, Jr.	Lee
Charles Paul Illges	Montgomery

William Oliver Jelks	Georgia
Charles Alfred Jones	Lauderdale
John Luther Kennedy	Lauderdale
Leo Kling	Mobile
Charles Roman Kuchinski	Missouri
Edward William Lind	Jefferson
Daniel MacDonald	Jefferson
Ramer Young MacIntyre	Georgia
Gordon Oliver McGehee	Montgomery
John Thomas McLure	Calhoun
Horace Lamar McWhorter	DeKalb
Roger Barton McWhorter	Colbert
James Marshall Mayes	Jefferson
Ray Meade	Jefferson
Thomas Cole Mitchell	Georgia
James Weston Moore	Jefferson
James Walter Motley	Randolph
Herman Clarence Nixon	Calhoun
William Thomas Owen, Jr.	Calhoun
William Henry Pace	Lee
Julius Trimble Pearson	Montgomery
George Washington Penton	Coosa
William Ivy Pittman	Houston
Howard Kennedy Porter	Georgia
John Taylor Postell	Georgia
Josiah Whittaker Powell	Lowndes
Osie Clyde Prather	Lee
Schuyler Harris Richardson	Limestone
Charles Francis Russell	Talladega
Leslie Warren Shook	Jackson
Asa Herman Skinner	Marengo
Leonard Clyde Slaton	Jefferson
Lester Chauncey Smith	Montgomery
Robert Franklin Smyer	Cherokee
James Grey Stelzenmuller	Baldwin
Bart Dannelly Stephens	Barbour
Reuben Johnson Stewart	Georgia
George Jefferson Street	Clay
Charles BPure Sullivan	Tallapoosa
Laurel Franklin Summers	Dallas
William Swart	Louisiana

George Washington Taylor	Choctaw
John James Weatherly	Calhoun
Bernard Augustus Webb	Montgomery
Millard Ames Westcott	Lee
Iralee Whitaker	Lee
Samuel Oliver White	Tallapoosa
William Thomas White	Hale
Robert Wilson Williamson	Tennessee
Ernest Gordon Wilson	Georgia
Walter Woolf Wynne	Marengo
Granville Allen Young	Montgomery

JUNIOR CLASS.

Samuel Adler	Calhoun
Charles Robertson Allen	Georgia
Theron Saville Allen	South Carolina
James Jefferson Beaver	Walker
John Blake	Colbert
George Eason Blue	Montgomery
Douglas Gerald Boozer	Georgia
Ridgeway Smith Boyd	Coffee
Albert C. Bryant	Wilcox
Sydney Marsh Bryant	Wilcox
Hugh Buchanan	Georgia
David Jasper Burleson	Marion
Alto Lee Byrd	Lee
Nash Sentell Carr	Tallapoosa
Charles Freeman Carter	Georgia
Eugene LaFayette Cathcart	Wilcox
Dudley Murfee Clements	Lee
Joseph Cohen	Tallapoosa
Benjamin Taylor Collier	Morgan
George Benjamin Collier	Pike
Edward Lane Davis	Mobile
Henry Howard Davis	Geneva
Pius Martin Davis	Walker
Lewis Manning Dinsmore	Morgan
Wiley Antony Downing	Escambia
Harry Thomas Edwards	Jefferson
Thomas Henry Edwards	Lee

Louis Breitenbach Ehrlich	Georgia
Harry Wright Esslinger	Madison
Whitley Lay Ewing	Etowah
William Thomas Ewing	Covington
Jefferson Cameron Falkner	Montgomery
Lucien Brown Forbes	Jefferson
Homer Quitman Gantt	Covington
James Gillis Gauntt	Tallapoosa
James McAdory Gillespy	Jefferson
Schley Gordy	Georgia
Jesse Eugene Grady	Covington
Harold William Graham	Baldwin
William Berry Griffin	Clay
Ernest Starr Hansberger	Jefferson
James Murphree Haralson	Pike
William Augustus Harman	Georgia
William Reese Harvey	Bibb
Loyd Jerome Hawley	Henry
Frank Coleman Hopson	Lee
Asa Hubbard	Marshall
Talmage Coates Hughes	Etowah
James Parks Hutcheson	Tallapoosa
Robert Bellinger Janney	Walker
Covington Drane Jenkins	Georgia
Franklin Pollard Jones	Jefferson
Bertram Kaufman	Georgia
Lawrence Kelly	Montgomery
John Judson Keyes	Limestone
Edgar Love Kimbrough	Georgia
Walter Searing Knapp	Lee
Richard Isaac Lanier	Jefferson
Harris Bolton Lett	Lee
Michael Jones Lingo	Henry
William Lee Lloyd	Macon
Milton Lothrop, Jr.	Texas
Harry Clyde McNamara	Georgia
George Tilghman McWhorter	Colbert
William Roberts Martin	Dale
Thomas Burton Meadows	Cullman
Benjamin Leopold Merkel	Talladega
Clarence Edward Mohns	Jefferson

Dennis Markette Moore	Georgia
Roy Worsham Moore	Georgia
Cornelius Van Cleef Morris	Colbert
Lemuel Bradford Nicholson	DeKalb
+John Charles Nickerson	Shelby
Arthur Samford Noble, Jr	Elmore
William Carter Oliver	Texas
Frank Ordway	Tennessee
+George Rosco Ozley	Shelby
George Horatio Packwood	Florida
James Arthur Parrish	Randolph
James Roy Pennell	South Carolina
Wales McIntosh Perdue	Jefferson
John Haigler Phillips	Elmore
Vance Corelton Porter	Lauderdale
Parker Preston Powell	Choctaw
John Bean Poyner	Dale
Robert Bruce Ragsdale	Jefferson
James Freeland Reeves	Barbour
Bryant Richardson	Sumter
Joseph Wheeler Rigney	Madison
Henry Thomas Rutland	Georgia
Jesse Blake Rutland	Georgia
Young Shackelford	Montgomery
George Frank Slaughter	Tallapoosa
James Carlisle Smith	Georgia
Malcolm Alexander Smith, Jr.	Autauga
Charles Lewis Speake	Morgan
John Morris Spearman	Walker
Jacob Daniel Spigener, Jr.	Hale
Edwin Ray Stauffacher	Georgia
Thomas Neil Steagall	Henry
John Logan Strock	Chilton
Albert Hodges Van Duzer	Georgia
Willis Venable	Jefferson
Lindsay Irwin Wallin	Georgia
John Edward Walker	Tallapoosa
Richard Christopher Ward	Henry
William Riddle Ward, Jr.	Greene
Benjamin Weil	Jefferson

+Not in full standing.

Austin Walker West	Georgia
Charles Bowden Wilhoite	Tennessee
John Price Williams	Marion
John Thomas Williamson	Cherokee
Dee Cortez Wood	Jefferson
Joseph Kyle Woolfolk	Georgia
Chandler Cox Yonge	Florida
Albert Leon Young	Lamar
Isadore Zadek	Montgomery

SOPHOMORE CLASS.

William Wrenshall Alexander	Missouri
Burton Gray Allen	Marengo
Edward Sholl Allen	Jefferson
Marion Gourdin Allen	South Carolina
Thomas Alred Anderson	Calhoun
Joseph Young Andrews	Lee
Miles Augustus Askew	Marengo
William Edward Austin, Jr.	Georgia
Aiden Emmett Barnes, Jr.	Georgia
Harvey Chester Bates	Bullock
William Curtis Bethea	Lee
James William Bivins, Jr.	Georgia
Jeptha Hill Blake	Colbert
Leonard Maurice Blumenfeld	Lee
William Smith Bonner	Clay
Ernest Moore Boyd	Sumter
William Wray Boyd	Lee
James Ray Brooks	Crenshaw
†William Edward Brush, Jr	Jefferson
Lytle DeWitt Burns	Lauderdale
George Cain	Jefferson
Hancel William Caldwell	Lee
William Wallace Caldwell	Lee
Elwyn Allen Cary	Lee
John James Cater, Jr.	Georgia
Eugene Leon Caton	Covington
Robert Brownlee Centerfit	Montgomery
Robert Waddell Chapman	Montgomery
Otis Gilmer Clements	Lee
Dabney Otis Collins	Hale

†Not in full standing.

Walter McConnel Collins	Georgia
Albert Hansford Cowart	Pike
John Willoughby Crane	Jefferson
Emmett Crook	Calhoun
John Eayres Davis	Mobile
Samuel Worth DuPuy	Jefferson
+Robert Melton Falkner	Montgomery
John Poston Figh	Montgomery
Lewis Pritchett Fort	Dallas
Thomas Morris Francis	Calhoun
Luther D. Fuller	Montgomery
Thurston DuPuis Futch	Florida
Edwin Wright Gay, Jr.	Montgomery
Louis Green Gibson	Tennessee
Alton R. Gissendanner	Dale
Robert Knox Greene	Jefferson
+Henry Gunn	Clarke
William Davis Hall	Georgia
Arthur Finley Harper	Jefferson
+Otis Bart Hayes	Shelby
Arthur Zellers Heard	Lee
John Daniel Henderson	Lee
Gordon Hicks	Tallapoosa
Walter Alexander Hicks	Tallapoosa
William Stewart Horton	Greene
John Ross Houser	Calhoun
Mary Alice Hudson	Lee
Joseph Proctor Huger	Calhoun
Austin Jackson	Florida
John Stanley Jervis	Morgan
Harry McCrorie Johnstone	Jefferson
James Taylor Jones	Montgomery
Macy Frank Jones	Lee
Taylor Goodwyn Jones	Marengo
Max Kessler	Georgia
Claude Eugene Kimball	Mobile
Irwin Kornman	Georgia
John Russell Liddell, Jr.	Wilcox
+Grafton Lothrop	Texas
Harry Foster Lowe, Jr.	Lee

+Not in full standing.

Alexander Lyons	Montgomery
John Robert McCaghren	Jefferson
Earl Hill McCowen	Georgia
Frederick Leonard McDaniel	Houston
James Tyson McDonald	Jefferson
†George Tinsley McElderry, Jr.	Talladega
Howard Clifford McGregor	Jefferson
John Antry McGuirk	Calhoun
Robert James Malone	Jefferson
†David Franklin Mason	Shelby
†Lehman Knoor Merkel	Talladega
Thomas Jasper Miles	Montgomery
†Americus Columbus Mitchell	Barbour
Charles Moore	Bibb
†Lloyd Berrien Moore	Georgia
Lawrence Stern Morgan	Jefferson
Jemison Mims Moseley	Dallas
Edward Cobb Motley	Lee
†Hubert Nelson Moye	Georgia
Clarence Thomas Nichols	Madison
Hugh O'Brien	Montgomery
Jack Lawrence Orr	Jefferson
William Malcolm Orum	Montgomery
Edmund Fay Pearce	Autauga
Frank Henry Beaufort Penley	Mobile
Irby Rhevel Pollard	Crenshaw
Harry Chester Powell	Calhoun
Saxon Pace Poyner	Dale
Joshua Stephen Pruitt	South Carolina
Van F. Pruitt	South Carolina
Edmond Urquhart Ragland	Montgomery
Arthur Leslie Reynolds	Shelby
Chauncey Lewis Rhodes	Marengo
Joseph Elmer Rhodes	Jefferson
Briggs Massengale Rogers	Jefferson
Frank Ross	Lee
Mary Jane Ross	Lee
Richard Fuller Sams	Georgia
Lewis Arthur Scarbrough, Jr.	Georgia
John Shehan	Etowah

†Not in full standing.

John Lloyd Shinn	Talladega
Jesse Carmichael Simmons	Dale
Benjamin Woodruff Simon	Marengo
Joseph Bradford Simpson, Jr.	Jefferson
Morgan Smaw	Hale
Harry Lester Smith	Mobile
Percy McCall Smith	Jefferson
†Roger Down Smith	Jefferson
Lawson Davenport Stapleton	Georgia
Frederick Stewart	Bibb
Richard Anderson Stratford	Russell
Walter Strother	Tallapoosa
Thomas Wilburn Taunton	Chambers
Edwin Crawford Thomas	Lee
Ernest Chatterton Thomas	Lee
Homer Bernard Tisdale	Conecuh
John Henderson Wallace	Jefferson
Benjamin Mills Washburn, Jr.	Montgomery
Francis Augustus Williams	Georgia
Stafford Smith Willis	Barbour
William Overton Winston	Sumter
Charles Stoughton Wood	Pike
Robert Edward Woodruff	Lowndes
Everett Dedman Woods	Montgomery
Benjamin Allen Wooten, Jr.	Marengo
James Harrison Wright, Jr.	Calhoun
Robert Byrd Wright	Georgia
Thomas Lee Wright	Lee
Thomas Parks Wright	Jefferson
George Taylor Wyche	Montgomery
William Franklin Young	Texas

FRESHMAN CLASS.

Alfred Proctor Aldrich, Jr.	South Carolina
Thomas Clifton Almon	Morgan
Clarence Pax Andrew	Georgia
Malcolm Marion Argo	Macon
Preston Stoddard Avery	Florida
Ernest Minge Bailey	Marengo
Edwin Reese Baker	Lee
George Richard Barnard	St. Clair

†Not in full standing.

Jack Bethea	Perry
Russell Lee Beutell	Georgia
John Neville Birch	Georgia
Dallas Sidney Boyd, Jr.	Lee
+Arthur Dortch Bradfield	Georgia
Henry Wells Brooks	Georgia
Roland Lee Brooks	Georgia
+George Patrick Brown	Jefferson
Peyton Burkhalter	Jefferson
Joseph Emerson Carter	Georgia
Stuart Alexander Chamblin	Mobile
Charles Dean Chitty	Georgia
William Thomas Clearman	Lamar
Wilbert Walton Cranford	Walker
Charles William Crumly	Jefferson
Frank Richard Curtis	Bibb
Bunyan Davie, Jr.	Barbour
George Clyde Davis	Geneva
Augustus Baker Dean	Lee
Edward Alonzo Dillard	Lee
Clarence Henry Dosier	Perry
Thomas Floyd Drew	Georgia
+Hugh Joseph Dudley	Russell
John Frederick Duggar, Jr.	Lee
John Abdiel Eichelberger	Calhoun
John Allen Enslen	Elmore
Thomas Pettengill Ewing	Etowah
Henry Grady Ezell	Tennessee
Joseph Russell Farabee	Calhoun
+Charles Rufus Freeman	Walker
Abraham Washington Gilmer	Choctaw
Henry Wiley Grady	Chambers
Young Charles Hall	Baldwin
Samuel Cheatham Harrell	Lee
John Emmette Harris	Wilcox
Samuel D. Haynie	Lee
Charles Houston	Tennessee
Stanton Hudmon	Lee
Rhoton Parrott Johnson	Georgia
Alfred O'Neal Keenan	Colbert

+Not in full standing.

+Joseph Ketzky	Montgomery
Robert Grady Kilgore	Walker
Irving Bernard Landauer	Madison
William Henry Lanford, Jr.	Arkansas
William J. Lewis	Marengo
Young Kilpatrick Lewis	Marengo
Roy Miller Lilly	Georgia
Ernest Felix Lopez	Mexico
Earle Alexander Major	Jefferson
William Charles Malone, Jr.	Talladega
Ernest Devon Manning	Covington
Homer Hosea Ballou Mask	Lee
Carl Edwin Melton	Georgia
Oleon Albert Miller	Jefferson
Richard Malcolm Mitchell	Lee
Lowe Morton	Georgia
Dawson Hope Mullen	Morgan
+Thomas DeLoach Nettles, Jr.	Mobile
Willis Belmont Nickerson	Tallapoosa
William Henry Nunnelly	Tennessee
Lanning Ferris Oakley, Jr.	Houston
Woodfin Grady Page	Geneva
William Ware Palmer	Lee
Roy Marion Perry	Montgomery
Hugh Pitard	Mobile
John Emmett Pitts	Russell
Samuel Rutherford Pitts, Jr.	Russell
Oscar Richardson Porter	Butler
Thomas Nimmons Powell	Georgia
William Roy Raney	Mobile
+Alfred Wade Reynolds	Barbour
James Benagh Richardson	Limestone
+James Henry Rikard	Wilcox
Bonnie McCoy Roberts	Chilton
David Clare Rumph	Georgia
Charles Edward Sauls	Georgia
Franz Paul Schone	Germany
Claude Winchester Shelverton	Georgia
William Edward Shivers	Shelby
William Erskine Skeggs	Morgan

+Not in full standing.

Henry Lee Smith	Dallas
†Walter Bragg Smith	Montgomery
George Vaughn Stelzenmuller	Baldwin
Charles Stuart Stirling	Pickens
Clifford Marvyn Stodghill	Chambers
Cecil Baron Strobhar	Georgia
Frank Eugene Taber	Montgomery
Charles Coleman Thach, Jr.	Lee
Charles Numa Thibaut	Louisiana
Henry Stratford Thomas	Marengo
†John Walden	Jefferson
Charles Mattison Watkins	South Carolina
Joseph Erickson Webster	Georgia
Thomas Holmes Whitfield	Marengo
Charles Frank Williams	Lee
Hugh Hardy Williamson	Lowndes
Paul Bernard Williamson	Montgomery
James Ridout Winchester	Georgia
Charles Porter Wright	Lee
Julius Wilmot Wright	Lee

SUB-FRESHMAN CLASS.

William Leonidas Allen	Marengo
William Mitchell Avery	Randolph
Hardy Henry Bailey	Coffee
James Matthew Barr	Barbour
Douglas Thomas Beatty	Jefferson
Joseph Hopson Bell	Marengo
Hugh Vincent Bell	Montgomery
Arthur Washington Billingsley	Clay
Clifford Smith Bishop	Colbert
Charles Swain Bobo	Tennessee
Alonzo Bolt	South Carolina
Ernest Charles Boulineaux	Colorado
Oliver Percy Boykin	Mobile
Robert Monroe Boykin	Mobile
Robert Reese Brantley	Escambia
Edward Gordon Brown	Lee
David Burchfield	Jefferson
William Henry Burnside	Georgia
Alexander Stephens Corgill	Marengo

†Not in full standing.

James Paul Corgill	Marengo
Charles Clarke, Jr.	Mobile
Frank Miller Coleman	Calhoun
Daniel Cook	Lee
William Pleasant Cowan	Calhoun
Rufus Franklin Dail	Mississippi
George Lawrence David	Sumter
Wilfred Davies	Jefferson
William Cole Davis	Lee
Kennet Marcus Dumas	Marengo
William Elmer Edwards	Lee
Samuel Carl Enslen	Jefferson
Charles A. Faulk	Barbour
Homer Glen Fuller	Washington
James Howard Graves	Lee
Alexander Gunn, Jr.	Clarke
Henry Grady Gunn	Clarke
Hiram Dudley Hale	Sumter
William Henry Hamlet	Tallapoosa
Charles Herndon Haralson	Georgia
Herbert Henderson	Macon
William Chesley Howton	Jefferson
Otho Wilder Humphries	Calhoun
Eugene Preston Jones	Fayette
William Verner Kay	Mississippi
James Kennybrook	Jefferson
Samuel Thompson Kirby	Colbert
Benjamin Joseph Lamb	Greene
Grover Cleveland Long	Florida
William Thomas McClure	South Carolina
James Webb McDonald	Jefferson
George Brainard McElhaney	Lee
Russell Edward Manes	Clarke
Mellville Eugene Manley	Georgia
Charles Oscar Mason	Wilcox
Marion Elerson Meadows	Lee
John David Means	Greene
George Keller Miller	Baldwin
John Garrett Quinn Miller	Georgia
William Gray Moore	Lee
J. C. Moxley	Crenshaw

Duncan Nolan	Jefferson
Herbert Madison Norwood	Jefferson
LeRoy Broun Ordway	Tennessee
Walter Glenn Oslin, Jr.	Jefferson
William Calvin O'Neal	Covington
James Reagan Owen	Calhoun
McDonald Pearson	Talladega
Wingate Posey Pickett	Bullock
Thomas Albert Pope	DeKalb
Carl E. Pritchett	Clarke
John Clinton Pinkston	Georgia
Malcolm James Rattray	Cherokee
Harris Reed	Calhoun
Frederick Schweikert Rogers	Marengo
James Arthur Routledge	Jefferson
Ernest William Sauer	Texas
Menzo Bloom Shelton	Bullock
Clarence Elvans Sibley	Mobile
William Armstead Smith	Calhoun
Gordon Hall Steele	Lowndes
Charles Stewart	Bibb
Deforest Stewart	Cherokee
Samuel John Stirling	Pickens
Hugh Platt Stith	Jefferson
William Lee Stroup	Morgan
Philip Glenn Sulzby	Greene
Joseph Langford Swain	Sumter
Charles Teal	Barbour
James Henry Thigpen	Montgomery
John Edward Thomas	Walker
William Montgomery Thweatt, Jr.	Talladega
Robert Perry Warnock	Calhoun
Grady Michael Weaver	Calhoun
Newton Ridley Whitfield	Jefferson
John Williamson	Jefferson
Frank Mott Willis	Russell

SPECIAL STUDENTS.

Richard Jackson Bell	Jefferson
Louis Cecil Boykin	Lee
James Taylor Calloway	Montgomery

Frank Thomas Cohn	Jefferson
William Bailey Davidson, Jr.	Montgomery
James Grover Davis	Walker
Giles Hamilton Edwards	Jefferson
Joseph Littleton Edwards	Jefferson
Hugh Friel, Jr.	Jefferson
Seymour Hall	Jefferson
Lewis Woodford Hardage	Morgan
Evans Harrell	Lee
Richard Norfleet Harris, Jr.	Hale
George Palmer Harrison	Jefferson
Robert Johnson Henderson	Lee
Edward Boring Jones	Georgia
William Lee Joseph	Florida
Peyton Robert King	Dallas
Thomas Courtenay Locke	Montgomery
Francis M. Lopez	Cuba
Joel Thaddeus McLemore, Jr.	Greene
George Bosse McVay, Jr.	Jefferson
Joseph Amyle Marques, Jr.	Mobile
Jeffrey Earle Morris	Jefferson
Harry Campbell Neill	Lee
Robert Burns Owens	Tennessee
Thomas Francis Parker	Jefferson
Robert Burch Robinson	Georgia
Woodmansee Allen Roush	Georgia
John Routledge	Jefferson
Philander Pearsall Scroggs	Georgia
Thomas Julian Skinner	Jefferson
Andrew Franklin Spear	Dallas
Ernest Henry Standifer	Tuscaloosa
George MacLeod Strader	South Carolina
George Thomas Tate	Georgia
Henry Elias Thomas	Jefferson
Lloyd Oland Thornton	Clay
Arthur Jacob Tubbs	Walker
Henry Clay Turpin	Hale
James Cransby Waits	Covington
Howland William Webber	Montgomery

DEPARTMENT OF PHARMACY.

FOUR YEAR COURSE.

Austin Francis Jefferson Boyd	Senior	Sumter
George Benjamin Collier	Junior	Pike
James McAdory Gillespy	Junior	Jefferson
Richard Isaac Lanier	Junior	Jefferson
George Henry Marsh	Post-Graduate	Lee
George Washington Taylor	Senior	Choctaw
Millard Ames Westcott	Senior	Lee
James Alto York	Post-Graduate	Dale

TWO YEAR COURSE.

William Corrie Bibb	First Year	Dallas
Adolph Leroy Black	First Year	Geneva
Walter Alexander Brown, Jr.	First Year	Houston
Norphlet Gillis Cammack, Jr.	First Year	Dallas
Roe Talbot Carter	Second Year	Pike
Louis Clark	First Year	Bibb
William Howard Eiland	First Year	Montgomery
Julius Essrig	First Year	Florida
William Wall Garrett	Second Year	Elmore
Alfred Nathaniel Hawkins, Jr.	First Year	Jefferson
Joseph Frederick Holloway	First Year	Geneva
Thaddeus Alonzo Ingram	Second Year	Pike
Grover Cleveland Kirkland	First Year	Escambia
James Hugh Kyzar	Second Year	Pike
John Ralph Lyon	First Year	Monroe
Erskine Martin	Second Year	Madison
Leon Morgan Martin	Second Year	Jefferson
Thomas Edwin Middlebrooks	Second Year	Barbour
Rufus Peerson	Second Year	Lauderdale
George Washington Penton	Second Year	Coosa
Joseph Robert Persons	Second Year	Montgomery
William Julian Russell	First Year	Cherokee
John Ernest Rutledge	First Year	Lee
T. B. Sellers	Second Year	Montgomery
John Slaughter Slaton	Second Year	Madison
Olie Algar Strickland	Second Year	Lowndes
Boylston Dandridge Smith	First Year	Covington
Edward Fleming Smith	First Year	Montgomery

Daniel Harman Thweatt	First Year	Calhoun
James E. Walker	First Year	Tallapoosa
Robert Alfred White	Second Year	Covington

Department of Veterinary Medicine.

William Rufus King Beck	Third Year	Wilcox
Arch Strickland Boyd	First Year	Sumter
Sanford Nathan Bradshaw	First Year	Jefferson
Oscar Tucker Brantley	First Year	Monroe
Harry Houston Breazeale	First Year	Lauderdale
Homer D. Cogdell	First Year	Bullock
William Wakefield Dawkins	First Year	Henry
Arthur Lawrence Dumas	First Year	Lee
E. Tandy Hallman	Second Year	Talladega
Forrest Revell Harsh	Second Year	Jefferson
Armstrong Hill	Third Year	Lee
William Madison Hobdy	First Year	Lee
William Monroe Howell	Third Year	Barbour
Percy Wilbur Hudson	Third Year	Lee
Isham Smith Ingram	Third Year	Lee
William Lemuel Ingram	Second Year	Lee
Walter Hubert Lee	Second Year	Pike
George Washington Lewallen	First Year	Jackson
Warnock Martin McClelen	First Year	Calhoun
Curtis Logan McCoy	First Year	Calhoun
Julian Curtis Meadows	First Year	Lee
Charles Calloway Middleton	Second Year	Lowndes
Benjamin Homer Moon	Second Year	Clay
Barney Patrick Moran	First Year	Jefferson
Robert Bascom Nixon	First Year	Sumter
James Frederick Park	First Year	Limestone
Oscar Watson Payne	First Year	Calhoun
Guy Julius Phelps	First Year	Montgomery
Foster Byers Philips	First Year	Etowah
John Thomas Prickett	First Year	Clay
Little Claude Ridley	First Year	Georgia
Bennett Thomas Simms	Second Year	Sumter
George Bascom Sparkman	Third Year	Florida
John Bowie Steadham	Second Year	Lee
Robert James Strickland	Second Year	Lowndes
Percy Hairston Sumner	First Year	Greene

James Ernest Threadgill, B. S.	Third Year	Lee
James Cleveland Webb	Second Year	Calhoun
Wilton Wendell Webb	First Year	Lee
Fortescue Bryan Whitfield	First Year	Marengo
Claude Lealse Willoughby, B. Agr.	First Year	Georgia
Frank Perry Woolf	Third Year	Baldwin

SUMMARY.

Graduate Students	25
Senior Class	101
Junior Class	117
Sophomore Class	141
Freshman Class	108
Special and Irregular Students	42
Sub-Freshman Class	96
Veterinary Medicine	42
Pharmacy	39
	711
Deduct for names counted twice	10
Total	701

NUMBER OF STUDENTS IN EACH SUBJECT OF STUDY.

English	537	Civil Engineering	67
History	379	Structural Design	23
French	39	Electrical Engineering	102
German	61	Mechanical Engineering	99
Latin	111	Mining Engineering	17
Mental Science	14	Architecture	25
Political Economy	84	Machine Design	90
Mathematics	545	Drawing	339
Chemistry	294	Descriptive Geometry	120
Chemical Laboratory	150	Mechanic Arts	387
Agriculture	169	Mineralogy	30
Animal Industry	195	Physiology	89
Physics	473	Veterinary Science	64
Botany	90	Pharmacy	39
Horticulture	31	Veterinary Medicine	43
Forestry	12	Military Department	628
Geology	80	Surveying	142

RESIDENCE BY STATES.

Alabama	574
Georgia	77
Tennessee	11
Florida	10
South Carolina	10
Texas	5
Mississippi	4
Missouri	2
Louisiana	2
Arkansas	1
Indiana	1
Colorado	1
Germany	1
Mexico	1
Cuba	1
Total	701

MILITARY ORGANIZATION

FOR SESSION 1908-1909

President,
CHARLES C. THACH.

Commandant,
COL. BENJAMIN S. PATRICK.

Surgeon,
J. H. DRAKE.

Regimental Staff,

Cadet Captain B. E. Harris, Adjutant.
Cadet Captain J. G. Stelzenmuller, Quartermaster.
Cadet Lieutenant H. J. Chatterton, Assistant Quartermaster.

Non-Commissioned Staff.

Cadet Sergeant M. A. Smith, Sergeant Major.
Cadet Sergeant J. P. Hutcheson, Quartermaster Sergeant.
Cadet Sergeant W. M. Perdue, Color Sergeant.
Cadet Sergeant J. E. Grady, Drum Major.

First Battalion.

Cadet Major S. H. Richardson.

Cadet Adjutant	Cadet Sergeant Major
W. S. Childs.	W. C. Oliver.

Cadet Captains,

Company "A."	Company "B."	Company "C."
R. A. Burleson.	S. W. Caldwell.	M. A. Westcott.

Cadet First Lieutenants,

R. B. McWhorter,	R. B. Ellyson,	H. G. Culverhouse,
E. W. Lind,	R. W. Williamson,	J. W. Moore.

Cadet Second Lieutenants,

———————	———————	H. K. Porter.

Cadet First Sergeants,

L. Kelly,	A. L. Young,	M. Lothrop.

Cadet Sergeants,

C. C. Yonge,	H. H. Davis,	E. R. Stauffacher,
E. L. Davis,	A. H. Van Duzer,	C. E. Mohns,
D. M. Moore,	W. L. Ewing,	L. M. Dinsmore.
		P. P. Powell,
		B. Weil.

Cadet Corporals,

J. E. Davis,
T. M. Francis,
E. L. Caton,
L. G. Gibson,
L. D. Burns,
L. B. Moore,
E. F. Pearce,
W. W. Alexander,
J. M. Moseley.
E. H. McCowen,
J. P. Huger,
J. A. McGuirk,
G. Lothrop,
W. W. Boyd,
L. P. Fort,
H. M. Johnstone,
T. A. Anderson,
F. L. McDaniel,
O. G. Clements.

Second Battalion.

Cadet Major J. W. Powell.

Cadet Adjutant
B. A. Webb.

Cadet Sergeant Major
D. M. Clements.

Cadet Captains,

Company "D."
J. T. Pearson.

Company "E."
J. B. Holman.

Company "F."
T. Beasley.

Cadet First Lieutenants,

G. W. Taylor,
C. R. Kuchinski,
D. J. Duffie,
W. J. Carter,
G. A. Young,
J. M. Mayes.

Cadet Second Lieutenants,

D. MacDonald,
J. B. Hodges,
W. I. Pittman.

Cadet First Sergeants,

R. S. Boyd,
G. E. Blue,
J. C. Smith.

Cadet Sergeants,

J. M. Spearman,
C. L. Speake,
W. A. Harman,
R. W. Moore,
J. F. Reeves,
J. M. Gillespy,
A. S. Noble,
R. B. Janney,
F. Ordway,
W. T. Ewing,
T. H. Edwards,
J. C. Falkner.

Cadet Corporals,

R. K. Greene,
C. T. Nichols,
B. A. Wooten,
R. W. Chapman,
W. A. Hicks,
R. B. Centerfit,
J. R. Liddell,
R. A. Stratford,
L. D. Fuller,
L. A. Scarbrough,
E. U. Ragland,
T. J. Miles,
W. O. Winston,
J. J. Cater,
R. J. Malone,
W. D. Hall,
L. S. Morgan,
H. C. Powell,
R. F. Sams.

The Cadet Band.

Session 1908-'09.

A. L. THOMAS, *Bandmaster.*

Military Officers.

J. J. Keyes, First Sergeant.
J. E. Grady, Sergeant and Drum Major.
B. Weil, Sergeant.
O. G. Clements, Corporal.
J. R. Liddell, Corporal.

Members,

O. G. Clements,
A. L. Clothier,
B. T. Collier,
J. A. Enslen,
E. S. Hansberger,
F. R. Harsh,
E. A. Haynie,
J. D. Henderson,
A. O. Keenan,
J. Kennybrook,
J. J. Keyes,
J. R. Liddell,
J. T. McDonald,
H. C. McGregor,
B. H. Moon,
H. N. Moye,
L. F. Oakley,
J. A. Routledge,
S. P. Poyner,
C. E. Sibley,
J. B. Steadham,
J. B. Simpson,
E. C. Thomas,
B. Weil,
C. P. Wright.

Cadets of the graduating class who were reported to the Adjutant General, U. S. Army, for publication in the "Official Army Register" as having ranked highest in the Military Department:

1889.

A. St. C. Dunstan,
B. H. Crenshaw,
A. J. Burr.

1890.

F. D. Milstead,
J. W. Bivins,
G. W. Emory.

1891.

L. E. Baker,
C. C. Johnson,
F. J. Bivins.

1892.

H. F. Dobbin,
A. L. Jones,
C. L. Brown.

1893.

Joel Dumas,
C. H. Smith,
J. F. Webb.

1894.

C. S. Andrews,
P. P. McKeown,
R. T. Dorsey.

1895.

S. L. Coleman,
H. H. Smith,
L. B. Gammon.

1896.

A. L. Alexander,
W. L. Fleming,
W. M. Williams.

1897.

P. G. Clark,
G. M. Holley,
G. N. Mitcham.

1898.

A. H. Clark,
A. McB. Ransom,
John Haralson.

1899.

I. F. McDonnell,
A. H. Feagin,
T. W. Wert.

1900.

E. M. Mason,
H. P. Powell,
C. W. Nixon.

1901.

A. F. Jackson,
J. D. Foy,
P. S. Haley.

1902.

W. D. Willis,
J. E. D. Yonge,
J. B. Garber.

1903.

H. E. Davis,
H. M. Yong
T. J. Dowdell.

1904.

J. McDuffie,
B. L. Shi,
George Dunglingson, Jr.

1905.

R. P. Boyd,
R. M. McCulloh, Jr.,
J. H. Paterson.

1906.

W. H. Foy,
F. H. Mohns,
M. A. Frazer.

1907.

N. B. McLeod,
W. L. Perdue,
G. F. Lipscomb.

1908.

S. A. Ellsberry,
C. M. Howard,
R. H. Liddell.

REQUIREMENTS FOR ADMISSION

All applicants for admission should present testimonials of good moral character, and those who come from other colleges must present certificates of honorable discharge.

To enter the freshman class the applicant must be not less than fifteen years of age, and should be qualified to pass a satisfactory examination on the following subjects:

1. Geography and History of the United States.

2. English—(a) English grammar and rhetoric as contained in any standard text. (b) An examination upon sentences containing incorrect English. (c) A composition giving evidence of satisfactory proficiency in spelling, punctuation, grammar and division into paragraphs.

(d) *Reading.* The composition of 1909 will be upon subjects drawn from one or more of the following works in English literature:

Group 1 (two books to be selected) Shakespeare: *As You Like It; Twelfth Night; Henry V.; Julius Caesar; Merchant of Venice.*

Group 2 (one book to be selected) Bacon: *Essays;* Bunyan: *The Pilgrim's Progress, Part I.; The Sir Roger de Coverly Papers in the Spectator;* Franklin: *Autobiography.*

Group 3 (one book to be selected) Chaucer: *Prologue;* Selections from *Spenser's Faerie Queene*; Pope. *The Rape of the Lock;* Goldsmith: *The Deserted Village;* Palgrave: *Golden Treasury* (first series), books II. and III., with especial attention to Dryden, Collins, Gray, Cowper, and Burns.

Group 4 (two books to be selected) Goldsmith: *The Vicar of Wakefield;* Scott: *Ivanhoe; Quentin Durward;* Hawthorne: *The House of the Seven Gables;* Thackeray: *Henry Esmond;* Mrs. Gaskell: *Cranford;* Dickens: *A Tale of Two Cities;* George Eliot: *Silas Marner;* Blackmore: *Lorna Doone.*

Group 5 (two books to be selected): Irving: *Sketch Book;* Lamb: *Essays of Elia;* De Quincey: *Joan of Arc* and *The English Mail Coach;* Carlyle: *Heroes* and *Hero Wor–*

ship; Emerson: *Essays* (selected); Ruskin: *Sesame* and *Lilies.*

Group 6 (two books to be selected): Coleridge: *The Ancient Mariner;* Scott: *The Lady of the Lake;* Byron: *Mazeppa* and *The Prisoner of Chillon;* Palgrave: *Golden Treasury* (First Series), Book IV, with special attention to Wordsworth, Keats, and Shelley; Macaulay: *Lays of Ancient Rome;* Poe: *Poems;* Lowell: *The Vision of Sir Launfal;* Arnold: *Sohrab and Rustum;* Longfellow: *The Courtship of Miles Standish;* Tennyson: *Gareth and Lynette, Lancelot and Elaine,* and *The Passing of Arthur;* Browning: *Cavalier Tunes, The Lost Leader, How They Brought the Good News from Ghent to Aix, Evelyn Hope, Home Thoughts from Abroad, Home Thoughts from the Sea, Incident of the French Camp, The Boy and the Angel, One Word More, Herve Riel, Pheidippides.*

The candidates will be required to present evidence of a general knowledge of the subject matter, and to answer simple questions on the lives of the authors. This part of the examination is intended only to test a general knowledge of the substance of the books.

(e) *Study and Practice.* This part of the examination presupposes the thorough study of the style of the work, and will be upon the following: Shakespeare: *Macbeth;* Milton: *Lycidas, Comus, L'Allegro* and *Il Penseroso;* Burke: *Speech on Conciliation with America;* or Washington: *Farewell Address,* and Webster: *First Bunker Hill Oration;* Macaulay: *Life of Johnson;* or Carlyle: *Essay on Burns.*

Preparation and examination on these works will be necessary before the student is classed as regular in any course.

3. *Mathematics.* (a) Arithmetic, including fundamental operations; common and decimal fractions; denominate numbers; the metric system; percentage, including interest and discount; proportion. (b) Algebra to quadratic equations, as in Wentworth's Higher Algebra; especial preparation is urged in *fundamental operations, factoring, divisors, multiples,* and *fractions; a knowledge of synthetic division together with the Remainder Theorem and its applications will be required.* (c) Geometry, two books, including all original exercises.

4. Those applicants who desire to continue the study of Latin should be qualified to pass a satisfactory examination in Latin grammar and the first two books of Cæsar, in addition to the above subjects.

For admission to the higher classes, students should be prepared to stand satisfactory examination in all of the studies of the lower classes, as shown in the course of study. Students applying for admission to the sophomore class will be examined in mathematics through quadratic equations in algebra, and on all of geometry. Where opportunity has not been offered to pursue special studies required at this institution, the system of equivalents will be adopted, and studies which denote an equivalent amount of discipline and training will be accepted as satisfactory. But if not prepared to pass an examination in history and chemistry at the time of application, the applicant will be required before graduation to pass a satisfactory examination on these subjects.

It is absolutely essential that students who hope to succeed should be well grounded in arithmetic, algebra, and geometry.

A working knowledge of the metric system should also be obtained.

ADMISSION ON CERTIFICATE.

Applicants will be admitted without examination on presenting a certificate from any of the CERTIFICATE SCHOOLS named herein.

The following educational institutions having made application to be correlated to this college and having presented an approved course of study, are hereby declared to be CERTIFICATE SCHOOLS, and are granted the privilege set forth in the following:

"Students from certificate schools will be admitted to the fresh-
"man class *without examination* upon the certificate of the presi-
"dent or principal, showing definitely that such students have
"completed satisfactorily all the studies required for admission, as
"stated in the catalogue, and are otherwise admissible."

The privilege of admitting students to the sophomore class on certificates will be granted only to those approved schools that have had a continuous existence for five years or more, and have previously had pupils admitted to that class without conditions.

The following form of certificate will be used:

I hereby certify that A---------- B---------- has attended the (*name the school or academy*) for -------- years, and has studied the following subjects:

in History -------------------------------------(*name the books*)

in English ------------------------------------- (*name the books*)
in algebra ---------------------------- (*state amount accomplished*)
in geometry .... ---------------- (*state amount accomplished*)
in Latin -- (*state books read*)
and having passed a satisfactory examination on these subjects, as required in the catalogue for admission to the ------------ class, he is recommended for the same.

Admission by certificate is regarded as provisional.

That is, though admitted to the class for which the certificate calls, the applicant may be required to take special examination in any subject in which his preparation proves unsatisfactory, or, after a fair trial, he may be dropped to a lower class, if he fails to maintain standing in the class to which he may be admitted.

CERTIFICATE SCHOOLS.

University Military School, Mobile	J. D. Wright
Verner Military Institute, Tuscaloosa	W. H. Verner
University School, Montgomery	J. M. Starke
Mt. Willing High School, Mt. Willing	J. W. Wray
State Normal School, Jacksonville	C. W. Daugette
Male Academy, Huntsville	
Furman Academy, Livingston	L. A. Cockrell
High School, Opelika	I. W. Hill
Eighth District Agricultural School, Athens	J. M. Atkinson
The Hillsborough County High School, Fla.	E. M. Hyde
Edgar's School for Boys, Montgomery	R. Bliss Edgar
Auburn Female Institute	W. F. Osburn
Seventh District Agricultural School, Albertville	J. B. Hobdy
Sixth District Agricultural School, Hamilton	H. O. Sargent
Eutaw Male Academy, Eutaw	H. C. Horton
Anniston Training School for Boys	W. A. White
Prattville Academy	J. D. Lane
Decatur City Schools	J. M. Collier
Dayton Academy	W. H. MacKellar
Georgia Military Academy	J. C. Woodward
Jasper Graded School	W. E. Turnipseed
Tuskegee High School	W. B. Riley
Mobile Military Institute	F. R. Peterson
University High School, Birmingham	I. J. White-M. B. Dickinson
Fourth District Agricultural School, Sylacauga	Geo. H. Thigpen
Gaylesville High School	John R. Ray
Oxford Graded Schools	John R. Bell
Carrollton (Ga.) Academy	
Ninth District Agricultural School, Blountsville	E. A. Miller
Gadsden High School	W. E. Striplin
Boyd High School, Brundidge	B. H. Boyd
Eufaula High School	F. L. McCoy
Union Springs High School	W. R. Harrison
Montgomery High School	C. L. Floyd
Brighton Academy	C. C. Slaton

Southern Agricultural School, Abbeville	C. J. Owens
Barnes' School, Montgomery	E. R. Barnes
Jackson Agricultural School	W. F. Monk
Pensacola Classical School	H. C. Armstrong
Pratt City High School	P. M. McNeil
Berry School	
Haleyville High School, Haleyville	—— Crowell
Pittsview Public School, Pittsview	J. L. Lucas
Roanoke Normal College, Roanoke	W. H. McDaniel

ADMISSION OF YOUNG WOMEN.

The privilege of becoming students in this institution is granted by the trustees to young women of mature mind and character on the following conditions:

The applicant must be seventeen years of age, and, if a candidate for a degree, be able to pass a satisfactory examination in each of the four subjects named below.

If the applicant is a candidate for admission as a special or irregular student, she must be able to pass a satisfactory examination in two of the subjects named, and may be admitted at an age less than seventeen, with a resident of Auburn acting as guardian, if application is approved by the faculty.

(a) In English—Proficiency in spelling and punctuation; grammar (Bartlett and McBain); rhetoric (Gardiner, Kittredge, and Arnold's Composition and Rhetoric and Baldwin's Rhetoric, literature, (Page's Chief American Poets and Syle's From Milton to Tennyson.)

For requirements in reading in literature, see page 53.

(b) In history—Macy's Our Government; Chambers's History of the United States; Myer's General History.

(c) In mathematics—Arithmetic, algebra, including quadratic equations, series, logarithms and the theory of equations, as in Wentworth's Higher Algebra; plane and solid geometry; all of plane trigonometry as in Wentworth.

(d) In Latin—Grammar, including the forms and syntax; Jones's Latin Prose Composition; translations of selections from Cæsar, Nepos, Virgil, Cicero's Orations, Cicero's Letters, or the equivalent.

The equivalents of these subjects, as in above text-books, may be substituted.

When admitted, upon complying with the conditions above stated, the applicants may enter upon the study of any subject taught and join any class, for which, upon examination, they may be found qualified. The only condition imposed will be that they engage in earnest study, and attend the exercises regularly. They will board in town with private families, and attend college only at the hours of their exercises.

ENTRANCE EXAMINATIONS.

Entrance examinations will be held on Wednesday, the 8th of September, the day on which the session opens. Candidates will also be examined during the session, when application is made for admission.

Applicants who are not prepared to stand the entrance examinations for full admission to the freshman class are admitted on condition, provided they are *sixteen* years of age, and are found after examination qualified to profit by the instruction given. Those who, after admission, are inattentive to their studies and neglectful of their duties, will be required to withdraw, but those who are studious and make sufficient progress will be advanced to full admission to the freshman class when they are qualified to pass satisfactorily the required examinations.

Students, upon their arrival at Auburn, will report immediately to the president. No student will be admitted to a recitation in any class previous to matriculation.

NUMBER OF EXERCISES REQUIRED.

All students are required to have *not less than fifteen* recitations per week, or their equivalent, in addition to the exercises in laboratory work, drawing, and military drill. These additional exercises occupy not less than twelve hours per week, and in all give twenty-seven to thirty hours per week required in college exercises.

SPECIAL AND IRREGULAR STUDENTS.

The privilege of electing studies in the lower classes is not granted to young students nor to their parents.

The faculty will assign a student, on admission, to that class of a prescribed course for which he is qualified, and for special reasons, approved by the faculty, he may be permitted to become irregular.

Students qualified to prosecute the studies of the junior class, and those over twenty-one years of age that are not candidates for a degree, are permitted to take, with the advice of the faculty, the subjects of study for which they may on examination prove themselves qualified.

For an applicant to enter upon the study of civil, mining, electrical, or mechanical engineering as a special or irregular student he must have studied algebra through quadratics and logarithms, plane geometry, and plane trigonometry.

The professor in charge of a department will decide by examination whether a special student is prepared for admission to his class.

A student who does not take all the studies in a class of one of the degree courses, as prescribed in the catalogue, and is permitted to take an irregular course, will be assigned to a member of the faculty, who will act as his special adviser, and when his course of study has been approved by the faculty, no other change will be permitted without the endorsement of his adviser.

Regular students who fail to pass satisfactory final examinations in any one study become irregular students. They will be classed as regular students pursuing a course for a degree, whenever they can pass the examination in those subjects in which they were found deficient.

Students, candidates for a degree, who are not in full standing in all the prescribed studies of a class, rank in the military department with that class in which they have the greatest number of studies, and their names are so placed in the catalogue.

ADMISSION TO HIGHER CLASSES.

At the beginning of each term conditioned students may, on application approved by the faculty, be examined for admission to the freshman class in history, English, or mathematics, and be admitted to the freshman class in those subjects in which he passes a satisfactory examination.

Students who have completed satisfactorily all the studies of the sophomore class, as prescribed in the catalogue, in any one of the regular degree courses, can enter, without condition, the junior class in any course except the general course, and the course in pharmacy, in which Latin is required, and the course in agriculture, in which botany and physiology are required.

Students who are admitted to the junior class from other institutions, on examination in English, Latin, and mathematics, and who have not completed all the studies of the sophomore class, in order to graduate, will be required to complete the course in chemistry and history as taught in the sophomore class. In addition to these two subjects, students who thus enter the junior class of the course in agriculture, will be required to complete the course in botany and physiology in the sophomore class.

COURSES OF INSTRUCTION.

The courses of study include the physical, chemical, and natural sciences, with their applications; agriculture, biology; horticulture; mechanics, astronomy, mathematics; drawing; civil, electrical, mechanical, and mining engineering; architecture; physiology and veterinary science, pharmacy; English, French, German, and Latin languages; history, political economy; mental and moral sciences.

The studies are arranged in regular courses so as to offer liberal and practical education as a preparation for the active pursuits of life.

There are nine degree courses for undergraduates, each leading to the degree of Bachelor of Science (B. S.) and requiring four years for its completion.

I. COURSE IN CIVIL ENGINEERING.

II. COURSE IN ELECTRICAL ENGINEERING.

III. COURSE IN MECHANICAL ENGINEERING.

IV. COURSE IN MINING ENGINEERING.

V. COURSE IN ARCHITECTURE.

VI. COURSE IN CHEMISTRY AND METALLURGY.

VII. COURSE IN AGRICULTURE.

VIII. COURSE IN PHARMACY.

IX. GENERAL COURSE.

X. TWO-YEAR COURSE IN MECHANIC ARTS.

XI. TWO-YEAR COURSE IN AGRICULTURE.

XII. TWO-YEAR COURSE IN PHARMACY.

XIII. THREE-YEAR COURSE IN PHARMACY.

XIV. THREE YEAR COURSE IN VETERINARY MEDICINE.

Course I. includes the principles and applications of sciences that directly relate to civil engineering, and is adapted to those who expect to enter that profession.

Course II. includes, besides the general principles and applications of the sciences, a special course in the applications of electricity and mechanics, and is arranged to fit men for the profession of electrical engineering.

Course III. furnishes instruction in steam engineering, materials of construction, drawing, and machine design, electrical engineering, together with laboratory work. The course is intended to qualify men to fill positions in the manufacturing industries.

Course IV. includes theoretical and practical instruction in geology, mineralogy, chemistry, civil and electrical engineering, as applied to mines; mapping, exploration; boring; ventilation; timbering, and all the operations pertaining to the profession of mining engineering.

Course V. has been arranged to give a theoretical and practical knowledge of architecture in order to enable students to take advantage of office opportunities upon graduation. It embraces architectural drawing and design, history, and ornamental architectural engineering, and office practice.

Course VI. provides for thorough theoretical and practical instruction in pure and technical chemistry and metallurgy, and in the scientific branches relating thereto. Students taking this course also pursue the study of German or French during the junior and senior years, and are thus prepared to utilize for reference and for study scientific journals and works published in those languages.

Course VII. includes theoretical and practical instruction in those branches that relate to agriculture, horticulture, animal industry, botany and entomology, and is especially adapted to those who intend to devote themselves to agricultural and horticultural pursuits.

Course VIII. includes, besides the general education of course VI. in the lower classes, a special course in pharmacy and chemistry, and is adapted to those who expect to become pharmacists, manufacturing chemists, or to enter upon the study of medicine.

Course IX. has been arranged to give a general and less technical education in subjects of science and language to meet the wants of those students who have selected no definite vocation in life, as well as those who intend ultimately to engage in teaching or in some commercial or professional business.

Courses X., XI., XII., XIII., and XIV., have been arranged for the benefit of those students who, for reasons satisfactory to themselves, are unable to continue at college four years and to take one of the regular degree courses.

Special One-Year Course in Agriculture:—Young men over twenty–one years of age who desire to study agriculture will be permitted, without examination, to enter any class under the professor of agriculture, and will be excused from reciting in any other class, from military duty, and from all other college duties; but will be under the general college regulations, and will be required to have their time fully occupied.

They may attend the lectures in agriculture in all the classes and engage in the practical work at the experiment station, in the field, stock–yard, dairy, garden, orchard, vineyard, etc., and may thus in one year acquire valuable practical knowledge of scientific agriculture.

A student who completes satisfactorily all the work of the senior class in a department, including the laboratory work, with approval of the faculty, may be awarded a certificate of proficiency in said subject.

Students who complete one of the two-year courses will, on passing a saisfactory examination, receive certificates indicating their attainments.

A student who completes the work of the two-year course in pharmacy and submits a satisfactory thesis will be granted the degree of Graduate in Pharmacy, (Ph. G.)

A student who completes the work of the three-year course in pharmacy and submits a satisfactory thesis will be granted the degree of Pharmaceutical Chemist, (Ph. C.)

A student who completes the work of the three-year course in veterinary medicine and submits a satisfactory thesis will be granted the degree of Doctor of Veterinary Medicine. (D. V. M.)

No degree or certificate of proficiency will be given in any course unless the applicant has passed a satisfactory examination in elementary English. Every candidate for a degree will be required to stand this special examination during the senior year.

Declamations and themes or orations are required of all regular students pursuing courses leading to a degree. For requirements, see Department of English.

GRADUATE COURSES.

A more extended graduate course of study may be taken by a graduate of this institution or of any college of equal grade. The completion of a course which leads to a post-graduate degree of Master of Science requires one year's residence, spent in the satisfactory prosecution of a course of study, with such laboratory work as may be approved by the faculty.

The candidate must also present to the faculty a satisfactory thesis showing independent investigation upon some subject pertaining to his course, and must pass an examination, at the close of each term, on the course of study prescribed, in which he must attain a grade of 75 per cent. The examination is written, and also oral in the presence of the faculty.

The subject for the thesis must be submitted to the faculty for approval prior to January 1st, and the thesis given to the professor of English by May 1st.

Applicants for a postgraduate degree and special students in post-senior studies are subject to the same general regulations as other students, and *pay the same fees;* but are exempt from all military duty.

The following courses are prescribed for the degree named:

1. *Master of Science.*—Studies in three departments, in two of which the candidate must have previously completed the full course of the senior class; or in special cases, with the approval of the faculty, a student may devote his full time to work in two departments, in each of which he has completed the full senior course.
2. *Master of Science in Pharmacy.*—Pharmacy and chemistry.

PROFESSIONAL DEGREES IN ENGINEERING.

The professional degree of Civil Engineer, Electrical Engineer, Mechanical Engineer, or Engineer of Mines will be conferred upon graduate students upon the satisfactory completion of the courses of study prescribed, a residence of one year at the Institute being required for the completion of these courses.

A written application stating the degree desired and the course of study selected must be submitted to the faculty at the beginning of the session. A satisfactory thesis must be completed and submitted by May 1st.

The above named professional degrees may be conferred upon graduates of the Alabama Polytechnic Institute in civil, electrical, mechanical, and mining engineering, *six* years after graduation, provided four years of the intervening time have been spent in the practice of that branch of engineering in which the candidate graduated, and an approved thesis is submitted to the faculty with a report of the character of the work done.

The above named professional degrees may be conferred four years after graduation upon a graduate who has spent the entire intervening time in the practice of that branch of engineering in which he graduated and has shown unusual aptitude for and ability in the practice of his profession. To obtain the degree upon these considerations, he must have filled satisfactorily a responsible position in charge of important engineering work.

As evidence of these facts, he must submit with his application written testimonials from his employers or clients, and an approved thesis shall be submitted.

Application for a degree must be filed not later than January 1, of the academic year.

The following courses of study are prescribed for the degrees named:

Civil Engineer. Civil engineering and any two subjects selected from the following: mathematics, analytical mechanics, mechanical engineering, electrical engineering, mining engineering, bacteriology.

Electrical Engineer. Electrical engineering and mechanical engineering; or electrical engineering, mathematics, and civil engineering.

Mechanical Engineer. Mechanical engineering and machine design; or mechanical engineering, mathematics, and mining engineering.

Engineer of Mines. Graduate students who have completed the course in mining engineering, including German, may apply for this degree. The subjects to be pursued are mining engineering, civil engineering, and one other technical subject related to mining and metallurgy, and approved by the faculty.

Special Students in Graduate Studies.—Students who are not graduates, but are qualified in special subjects to prosecute graduate studies, and desire to prepare themselves more thoroughly for professional or special work in any one of the departments of engineering, in chemistry, pharmacy, veterinary science, or other subjects in which instruction is given, may, when qualified, with approval of the faculty, enter this higher department of study and have all the privileges of postgraduate students.

A certificate of proficiency will be given when any one subject of a postgraduate course is satisfactorily completed.

Two degrees will not be given the same year.

LABORATORIES..

Laboratory instruction constitutes an important feature in the course of education provided for the students of this institute, and as far as possible all students are required to enter upon laboratory work in some one department.

Laboratory instruction and practical work are given in the following departments:

I. CIVIL ENGINEERING, FIELD WORK, SURVEYING, ETC.

II. ELECTRICAL ENGINEERING, TELEPHONE ENGINEERING.

III. MECHANICAL ENGINEERING.

IV. MINING ENGINEERING.

V. ARCHITECTURE.

VI. MECHANIC ARTS.

VII. TECHNICAL DRAWING.

VIII. PHYSICS.

IX. MINERALOGY.

X. ORE DRESSING.

XI. CHEMISTRY, METALLURGY.

XII. AGRICULTURE.

XIII. HORTICULTURE.

XIV. BOTANY, BIOLOGY.

XV. ANIMAL INDUSTRY.

XVI. PHARMACY, PHARMACEUTICAL CHEMISTRY.

XVII. VETERINARY SCIENCE, BACTERIOLOGY, PHYSIOLOGY.

XVIII. ENTOMOLOGY.

XIX. PHOTOGRAPHY.

NOTE.—Special work in English or history may be taken by students in the general course as a substitute for laboratory work.

ORGANIZATION

The departments of instruction of the Institute have been arranged in three groups, known as the Academic College, the College of Engineering and Mines, and the College of Agricultural Sciences.

The Academic College offers one degree course in the general educational subjects of science and languages.

The College of Engineering and Mines offers degree courses in civil engineering, electrical engineering, mechanical engineering, mining engineering, and architecture.

The following courses of instruction are given in the College of Agricultural Sciences:

I. Four-year course in chemistry and metallurgy.
II. Four-year course in agriculture.
III. Four-year course in pharmacy.
IV. Three-year course in pharmacy.
V. Two-year course in pharmacy.
VI. Three-year course in veterinary medicine.
VII. Two-year course in agriculture.

In accordance with the action of the Board of Trustees, the members of the instructional force are assigned to membership in the faculties of the three colleges.

COURSES OF INSTRUCTION

ACADEMIC COLLEGE.

GENERAL COURSE.

FRESHMAN CLASS.

First Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 101a	2
	Academic 102a	3
History	Academic 201	2
Latin	Academic 209	4
Mathematics	Academic 401	3
	Academic 402	2
Drawing	Engineering 601	3
Mechanic Arts	Engineering 301	6
Military Drill	Academic 600	3

Second Term.

English	Academic 101b	2
	Academic 102b	3
History	Academic 201	2
Latin	Academic 209	4
Mathematics	Academic 401	2
	Academic 402	3
Drawing	Engineering 601	3
Mechanic Arts	Engineering 302	6
Military Drill	Academic 600	3

Third Term.

English	Academic 101b	2
	Academic 102b	3
History	Academic 201	3
Latin	Academic 209	3
Mathematics	Academic 401	2
	Academic 402	3
Drawing	Engineering 601	3
Agriculture	Agricultural 201	2
Mechanic Arts	Engineering 303	6
Military Drill	Academic 600	3

SOPHOMORE CLASS.

First Term.

Latin	Academic 210	5
English	Academic 105	4
History	Academic 202	3
Mathematics	Academic 403	5
General Chemistry	Agricultural 101	3

Subject	Number of Course	Hours per Week
Drawing	Engineering 603	3
Mechanic Arts	Engineering 304	4
Chemical Laboratory	Agricultural 110a	2
Military Drill	Academic 600	3

Second Term.

Latin	Academic 210	5
English	Academic 105	4
History	Academic 202	3
Mathematics	Academic 404	5
General Chemistry	Agricultural 101	3
Drawing	Engineering 603	3
Mechanic Arts	Engineering 305	4
Chemical Laboratory	Agricultural 110a	2
Military Drill	Academic 600	3

Third Term.

Latin	Academic 210	5
English	Academic 105	4
History(x)	Academic 204	3
Mathematics	Academic 404 Academic 405	5 3
General Chemistry	Agricultural 101	3
Drawing	Engineering 603	3
Mechanic Arts	Engineering 305	4
Chemical Laboratory	Agricultural 110a	2
Military Drill	Academic 600	3

(x) Botany, Agricultural 301, or Theoretical Mechanics, Academic 503, may be substituted.

JUNIOR CLASS.

First Term.

English	Academic 107	3
Latin	Academic 211	3
French	Academic 301a	4
German	Academic 305a	4
Mathematics	Academic 406 Academic 407	3 2
Physics	Academic 504	3
Military Tactics	Academic 601	1
Laboratory Work(a)		6
Military Drill	Academic 600	3

Second Term.

English	Academic 107	3
Latin	Academic 211	3
French	Academic 301b	3

German	Academic 305b	3
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Military Tactics	Academic 601	1
Laboratory Work(a)		6
Military Drill	Academic 600	3

Third Term.

English	Academic 107	3
Latin	Academic 211	3
French	Academic 301c	3
German	Academic 305c	4
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Military Tactics	Academic 602	1
Laboratory Work(a)		6
Military Drill	Academic 600	3

(a) The student may elect laboratory of any department of natural science for which he may be qualified.

SENIOR CLASS.

First Term.

English	Academic 108	2
Mental Science	Academic 111	2
Latin (x)	Academic 212	3
French	Academic 302a	4
German	Academic 306a	4
Geology	Engineering 403	2
Military Science	Academic 603	1
Laboratory Work(a)		6

Second Term.

English	Academic 108	2
Mental Science	Academic 111	2
Latin (x)	Academic 212	3
French	Academic 302b	4
German	Academic 306b	4
Geology	Engineering 403	2
Military Science	Academic 604	1
Laboratory Work(a)		6

Third Term.

Political Economy	Academic 112	2
Mental Science	Academic 111	2
Latin (x)	Academic 212	3
French	Academic 302c	4
German	Academic 306c	4
Geology	Engineering 403	2

Subject	*Number of Course*	*Hours per Week*
Astronomy	Academic 506	2
or Teachers' Physics	Academic 508	2
Military Science	Academic 605	1
Laboratory Work (a)		6

(x) English Constitutional History may be substituted.

(a) The student may elect laboratory of any department of natural science for which he may be qualified.

COLLEGE OF ENGINEERING AND MINES.

(The following studies in the freshman and sophomore classes are prescribed in all of the departments of the College of Engineering and Mines.)

FRESHMAN CLASS.

First Term.

English	Academic 101a	2
	Academic 102a	3
History	Academic 201	2
Mathematics	Academic 401	3
	Academic 402	2
Elementary Physics	Academic 501	3
Drawing	Engineering 601	3
Mechanic Arts	Engineering 301	6
Military Drill	Academic 600	3

Second Term.

English	Academic 101b	2
	Academic 102b	3
History	Academic 201	2
Mathematics	Academic 401	2
	Academic 402	3
Elementary Physics	Academic 501	3
Drawing	Engineering 601	3
Mechanic Arts	Engineering 302	6
Military Drill	Academic 600	3

Third Term.

English	Academic 101b	2
	Academic 102b	3
History	Academic 201	3
Mathematics	Academic 401	2
	Academic 402	3
Agriculture	Agricultural 201	2
	Agricultural 801	
Drawing	Engineering 601	3
Mechanic Arts	Engineering 303	6
Military Drill	Academic 600	3

SOPHOMORE CLASS.

First Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 103a	3
History	Academic 202	3
Mathematics	Academic 403	5
General Chemistry	Agricultural 101	4
Descriptive Geometry	Engineering 602	3
Architectural Drawing (a)	Engineering 501	3
Drawing	Engineering 603	3
Mechanic Arts	Engineering 304	4
Physical Laboratory	Academic 502	2
Chemical Laboratory	Agricultural 110a	2
Military Drill	Academic 600	3

Second Term.

English	Academic 103b	3
History	Academic 202	3
Mathematics	Academic 404	5
General Chemistry	Agricultural 101	4
Descriptive Geometry	Engineering 602	3
Architectural Drawing (a)	Engineering 501	3
Drawing	Engineering 603	3
Mechanic Arts	Engineering 305	4
Physical Laboratory	Academic 502	2
Chemical Laboratory	Agricultural 110a	2
Military Drill	Academic 600	3

Third Term.

English	Academic 104	3
Elementary Mechanics	Academic 503	3
Mathematics	Academic 404	4
Surveying	Academic 405	3
Surveying (b)	Engineering 101	4
General Chemistry	Agricultural 101	4
Descriptive Geometry	Engineering 602	3
Architectural Drawing (a)	Engineering 501	3
Drawing	Engineering 603	3
Mechanic Arts	Engineering 305	4
Physical Laboratory	Academic 502	2
Chemical Laboratory	Agricultural 110a	2
Military Drill	Academic 600	3

(a) Required of students who expect to take the course in architecture.

(b) Required of students who expect to take the course in civil engineering or in mining engineering.

IN CIVIL ENGINEERING.

JUNIOR CLASS.

First Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 107	3
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Civil Engineering	Engineering 103	5
Structural Drafting	Engineering 107	5
Field and Office		6
Military Tactics	Academic 601	1
Machine Shop	Engineering 310	4
or Mineralogy	Engineering 402	4
Military Drill	Academic 600	3

Second Term.

English	Academic 107	3
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Roads and Pavements	Engineering 104	5
Structural Drafting	Engineering 107	5
Field Work		3
Graphic Stactics	Engineering 105	3
Machine Shop	Engineering 310	4
or Mineralogy	Engineering 402	4
Military Tactics	Academic 601	1
Military Drill	Academic 600	3

Third Term.

English	Academic 107	3
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Mechanics of Materials	Engineering 106	5
Structural Drafting	Engineering 107	5
Field and Office		6
Machine Shop	Engineering 310	4
or Mineralogy	Engineering 310	4
Military Tactics	Academic 602	1
Military Drill	Academic 600	3

Surveying. Sixty hours per week for four weeks immediately after commencement in summer surveying camp.

SENIOR CLASS.

First Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 108	2
Mathematics	Academic 408	3
Physics	Academic 505	2
Geology	Engineering 403	2
Civil Engineering	Engineering 108	5
Structural Design	Engineering 113	5
Military Science	Academic 603	1
Field and Office		6

Second Term.

English	Academic 108	2
Mathematics	Academic 408	3
Physics	Academic 505	2
Geology	Engineering 403	2
Civil Engineering	Engineering 110	5
Structural Design	Engineering 113	5
Military Science	Academic 604	1
Mechanical Engineering Lab	Engineering 319	4
Thesis	Engineering 114	6

Third Term.

Political Economy	Academic 112	2
Astronomy	Academic 506	2
Geology	Engineering 403	2
Sanitary Engineering	Engineering 111	5
Structural Design	Engineering 113	5
Military Science	Academic 605	1
Thesis	Engineering 114	6

IN ELECTRICAL ENGINEERING.

JUNIOR CLASS.

First Term.

English	Academic 107	3
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Electrical Engineering	Engineering 201	3
Electrical Measures	Engineering 205	1
Kinematics	Engineering 604	3
Machine Design	Engineering 606	4
Practical Mechanics	Engineering 308	1
Electrical Laboratory	Engineering 206	4
Shop Work	Engineering 309	6
Military Tactics	Academic 601	1
Military Drill	Academic 600	3

Second Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 107	3
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Electrical Engineering	Engineering 202	3
Electrical Measures	Engineering 205	1
Mechanics	Engineering 306	3
Machine Design	Engineering 606	4
Practical Mechanics	Engineering 308	1
Electrical Laboratory	Engineering 207	4
Shop Work	Engineering 309	6
Military Tactics	Academic 601	1
Military Drill	Academic 600	3

Third Term.

English	Academic 107	3
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Electrical Engineering	Engineering 203	3
Electrical Tests	Engineering 205	1
Strength of Materials	Engineering 307	3
Machine Design	Engineering 606	4
Practical Mechanics	Engineering 308	1
Electrical Laboratory	Engineering 208	4
Shop Work	Engineering 309	6
Military Tactics	Academic 602	1
Military Drill	Academic 600	3

SENIOR CLASS.

First Term.

English	Academic 108	2
Mathematics	Academic 408	3
Physics	Academic 505	2
Electrical Engineering	Engineering 210	5
Electrical Laboratory	Engineering 213	4
Electrical Designing	Engineering 221	2
Telephone Engineering	Engineering 216	2
Telephone Laboratory	Engineering 207	2
Steam Engines	Engineering 311	5
Mech. Engineering Lab'y	Engineering 318	4
Machine Design	Engineering 607	1
Machine Design	Engineering 609	3
Military Science	Academic 603	1

Second Term.

English	Academic 108	2
Mathematics	Academic 408	3
Physics	Academic 505	2

Subject	*Number of Course*	*Hours per Week*
Electrical Engineering	Engineering 211	5
Electrical Laboratory	Engineering 213	4
Electrical Designing	Engineering 221	2
Telephone Engineering	Engineering 216	2
Telephone Laboratory	Engineering 217	2
Thermodynamics	Engineering 312	5
Mech. Engineering Lab'y.	Engineering 319	4
Machine Design	Engineering 607	1
Machine Design	Engineering 609	3
Military Science	Academic 604	1

Third Term.

Political Economy	Academic 112	2
Mathematics	Academic 408	3
Astronomy	Academic 506	2
Electrical Engineering	Engineering 212	5
Electric Engineering Lab'y.	Engineering 213	4
Specifications & Contracts.	Engineering 220	2
Electrical Designing	Engineering 221	2
Thermodynamics	Engineering 312	5
Mech. Engineering Lab'y.	Engineering 320	4
Machine Design	Engineering 607	1
Machine Design	Engineering 609	3
Military Science	Academic 605	1

IN MECHANICAL ENGINEERING.

JUNIOR CLASS.

First Term.

English	Academic 107	3
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Kinematics	Engineering 604	3
Graphics of Mechanics	Engineering 605	1
Machine Design	Engineering 606	4
Electrical Engineering	Engineering 204	3
Electrical Engineering Lab.	Engineering 206	4
Practical Mechanics	Engineering 308	1
Shop Work	Engineering 309	6
Military Tactics	Academic 601	1
Military Drill	Academic 600	3

Second Term.

English	Academic 107	3
Mathematics	Academic 406	3
	Academic 407	2
Kinematics	Engineering 604	3
Graphics of Mechanics	Engineering 605	1
Machine Design	Engineering 606	4

Subject	*Number of Course*	*Hours per Week*
Electrical Engineering	Engineering 204	3
Electrical Engineering Lab.	Engineering 206	4
Practical Mechanics	Engineering 308	1
Shop Work	Engineering 309	6
Military Tactics	Academic 601	1
Military Drill	Academic 600	3

Third Term.

English	Academic 107	3
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Strength of Materials	Engineering 307	3
Graphics of Mechanics	Engineering 605	1
Machine Design	Engineering 606	4
Electrical Engineering	Engineering 204	3
Electrical Engineering Lab.	Engineering 208	4
Practical Mechanics	Engineering 308	1
Shop Work	Engineering 309	6
Military Tactics	Academic 602	1
Military Drill	Academic 600	3

Summer course, Engineering 412. Taken immediately after commencement.

SENIOR CLASS.

First Term.

English	Academic 108	2
Mathematics	Academic 408	3
Physics	Academic 505	2
Electrical Engineering (a)	Engineering 219	2
Heating and Ventilation	Engineering 313	2
Mechanics of Materials	Engineering 315	3
Power Plant Engineering	Engineering 311	5
Machine Design	Engineering 607	1
Machine Design	Engineering 608	6
Electrical Engineering Lab.	Engineering 220	4
Mech. Engineering Lab'y	Engineering 318	4
Military Science	Academic 603	1

Second Term.

English	Academic 108	2
Mathematics	Academic 408	3
Physics	Academic 505	2
Hydraulics	Engineering 110	5
Thermodynamics	Engineering 312	5
Gas Engines	Engineering 314	2
Machine Design	Engineering 607	1
Machine Design	Engineering 608	6
Mech. Engineering Lab'y	Engineering 319	4
Military Science	Academic 604	1

Third Term.

Subject	*Number of Course*	*Hours per Week*
Political Economy	Academic 112	2
Mathematics	Academic 408	3
Astronomy	Academic 506	2
Materials of Machines	Engineering 315	3
Thermodynamics	Engineering 312	5
Contracts and Specifications	Engineering 221	2
Machine Design	Engineering 607	1
Machine Design	Engineering 608	6
Mech. Engineering Lab'y	Engineering 320	4
Military Science	Academic 605	1

(a) Courses 108 and 109 in civil engineering may be substituted.

IN MINING ENGINEERING.

JUNIOR CLASS.

First Term.

English	Academic 107	3
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Geology	Engineering 403	2
Drawing	Engineering 406	6
Surveying	Engineering 103	5
Laboratory Mineralogy	Engineering 401	4
Machine Shop	Engineering 310	4
Practical Mechanics	Engineering 308	1
Military Tactics	Academic 601	1
Military Drill	Academic 600	3
Field Work	Engineering 103	3

Second Term.

English	Academic 107	3
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Mechanics	Engineering 308	3
Geology	Engineering 403	2
Drawing	Engineering 406	3
Mining Engineering	Engineering 404	5
Laboratory Mineralogy	Engineering 402	4
Machine Shop	Engineering 310	4
Practical Mechanics	Engineering 308	1
Military Tactics	Academic 601	1
Military Drill	Academic 600	3
Field Work	Engineering 103	3

Third Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 107	3
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Strength of Materials	Engineering 307	3
Geology	Engineering 403	2
Drawing	Engineering 406	3
Mining Engineering	Engineering 405	5
Laboratory Mineralogy	Engineering 402	4
Machine Shop	Engineering 310	4
Practical Mechanics	Engineering 308	1
Military Tactics	Academic 601	1
Military Drill	Academic 600	3
Field Work	Engineering 103	3

Summer course, Engineering 412. Taken immediately after commencement.

SENIOR CLASS.

First Term.

English	Academic 108	2
Mathematics	Academic 408	3
Physics	Academic 505	2
Geology	Engineering 408	2
Mining Engineering	Engineering 410	3
Electrical Engineering	Engineering 218	2
Metallurgy	Engineering 412	2
Drawing	Engineering 411	3
Military Science	Academic 603	1
Assaying	Agricultural 108c	8
Metallurgical Laboratory	Engineering 412	3

Second Term.

English	Academic 108	2
Mathematics	Academic 408	3
Physics	Academic 505	2
Hydraulics	Engineering 110	5
Mining Engineering	Engineering 410	3
Electrical Engineering	Engineering 218	2
Metallurgy	Engineering 412	2
Drawing	Engineering 411	3
Military Science	Academic 604	1
Assaying	Agricultural 108c	8
Metallurgical Laboratory	Engineering 412	3

Third Term.

Political Economy	Academic 112	2
Mathematics	Academic 408	3
Astronomy	Academic 506	2

Subject	*Number of Course*	*Hours per Week*
Geology	Engineering 409	2
Mining Engineering	Engineering 410	3
Electrical Engineering	Engineering 218	2
Metallurgy	Engineering 412	2
Drawing	Engineering 411	3
Military Science	Academic 605	1
Assaying	Agricultural 108c	8
Metallurgical Laboratory	Engineering 412	3

IN ARCHITECTURE.

JUNIOR CLASS.

First Term.

French	Academic 301a	4
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Architectural Graphics	Engineering 508	4
Architectural History	Engineering 503	3
Theory of Architecture	Engineering 502	1
Drawing and Design	Engineering 504	10
Military Tactics	Academic 601	1
Military Drill	Academic 600	3

Second Term.

French	Academic 301b	3
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Mechanics	Engineering 306	3
Architectural Graphics	Engineering 507	4
Architecture History	Engineering 503	3
Theory of Architecture	Engineering 502	
Drawing and Design	Engineering 504	10
Military Tactics	Academic 601	1
Military Drill	Academic 600	3

Third Term.

French	Academic 301c	3
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Architectural Graphics	Engineering 508	4
Architecture History	Engineering 503	3
Theory of Architecture	Engineering 502	1
Drawing and Design	Engineering 504	10
Military Tactics	Academic 601	1
Military Drill	Academic 600	3

SENIOR CLASS.

First Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 108	2
Mathematics	Academic 408	3
Physics	Academic 505	2
Architectural Engineering	Engineering 507	3
Specifications and Building Materials	Engineering 508	3
Architectural Drawing and Design	Engineering 506	16
Military Science	Academic 603	1

Second Term.

English	Academic 108	2
Mathematics	Academic 408	3
Physics	Academic 505	2
Architectural Engineering	Engineering 507	3
Specifications and Building Materials	Engineering 508	3
Architectural Drawing and Design	Engineering 506	16
Military Science	Academic 604	1

Third Term.

Political Economy	Academic 112	2
Mathematics	Academic 408	3
Physics	Academic 505	2
Architectural Engineering	Engineering 507	3
Specifications and Building Materials	Engineering 508	3
Architectural Drawing and Design	Engineering 506	16
Military Science	Academic 605	1

TWO-YEAR COURSE IN MECHANIC ARTS.

FIRST YEAR.

First Term.

English	Academic 101a	2
	Academic 102b	2
History	Academic 201	2
Mathematics	Academic 401	3
	Academic 402	2
Elementary Physics	Academic 501	3
Drawing	Engineering 601	3
Shop Work	Engineering 301	6
Military Drill	Academic 600	3

Second Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 101b	2
	Academic 102b	2
History	Academic 201	2
Mathematics	Academic 401	3
	Academic 402	2
Elementary Physics	Academic 501	3
Drawing	Engineering 601	3
Shop Work	Engineering 302	6
Military Drill	Academic 600	3

Third Term.

English	Academic 101b	2
	Academic 102b	3
History	Academic 201	3
Mathematics	Academic 401	3
	Academic 402	2
Agriculture	Agricultural 201	2
Drawing	Engineering 601	3
Shop Work	Engineering 203	6
Military Drill	Academic 600	3

SECOND YEAR.

First Term.

English	Academic 102a	3
Mathematics	Academic 403	5
Physics	Academic 501	3
Drawing	Engineering 603	3
Shop Work	Engineering 304 and 309	12
Military Drill	Academic 600	3

Second Term.

English	Academic 103b	3
Mathematics	Academic 404	5
Physics	Academic 501	3
Drawing	Engineering 603	3
Shop Work	Engineering 305 and 309	12
Military Drill	Academic 600	3

Third Term.

English	Academic 104	3
Mathematics	Academic 404	5
	Academic 405	3
Physics	Academic 501	3
Drawing	Engineering 602	3
Shop Work	Engineering 305 and 309	12
Military Drill	Academic 600	3

COLLEGE OF AGRICULTURAL SCIENCES.

(The following studies in the freshman and sophomore classes are prescribed for the departments of the College of Agricultural Sciences.)

FRESHMAN CLASS.

First Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 101a*	2
	Academic 102a	3
History	Academic 201	2
Latin (a)	Academic 209	4
Mathematics	Academic 401	3
	Academic 402	2
Elementary Physics*	Engineering 501	3
Drawing	Engineering 601	3
Mechanic Arts Laboratory	Engineering 301	6
Military Drill	Academic 600	3

Second Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 101b*	2
	Academic 102b	3
History	Academic 201	2
Latin (a)	Academic 209	4
Mathematics	Academic 401	2
	Academic 402	3
Elementary Physics*	Academic 501	3
Drawing	Enginering 601	3
Mechanic Arts Laboratory	Engineering 302	6
Military Drill	Academic 600	3

Third Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 101b*	2
	Academic 102b	3
History	Academic 201	3
Latin (a)	Academic 209	3
Mathematics	Academic 401	2
	Academic 402	3
Agriculture	Agricultural 801 Agricultural 201	2
Drawing	Engineering 601	3
Mechanic Arts Laboratory	Engineering 303	6
Military Drill	Academic 600	3

*Not required of students in pharmacy.

(a) Required of students who intend to elect the course in pharmacy.

SOPHOMORE CLASS.

First Term.

Subject	*Number of Course*	*Hours per Week*
English (a)	Academic 103a	3
Latin (b)	Academic 210	5
History	Academic 202	3
Mathematics	Academic 403	5
General Chemistry	Agricultural 101	3
Drawing	Engineering 603	3
Physiology	Agricultural 501	2
Animal Industry	Agricultural 802	2
Mechanic Arts Laboratory	Engineering 304	4
Chemical Laboratory (c)	Agricultural 110a	2
Military Drill	Academic 600	3

Second Term.

English (a)	Academic 103b	3
Latin (b)	Academic 210	5
History	Academic 202	4
Mathematics	Academic 404	5
General Chemistry	Agricultural 101	3
Physiology	Agricultural 301	7
Animal Industry Laboratory	Agricultural 803	2
Agriculture	Agricultural 202	4
Drawing	Engineering 305	4
Mechanic Arts Laboratory	Engineering 603	3
Chemical Laboratory (c)	Agricultural 110a	2
Military Drill	Academic 600	3

Third Term.

English (a)	Academic 104	3
Latin (b)	Academic 210	5
Mathematics	Academic 404	4
Surveying	Engineering 101	4
General Chemistry	Agricultural 101	3
Botany and Botany Lab.	Agricultural 301	7
Physiology	Agricultural 501	2
Agriculture	Agricultural 203	4
Drawing	Engineering 603	3
Mechanic Arts Laboratory	Engineering 305	4
Chemical Laboratory (c)	Agriculture 110a	2
Military Drill	Academic 600	3

(a) Latin may be substituted. This English is not required of students who expect to elect the course in pharmacy.

(b) Required of students who intend to elect the course in pharmacy.

(c) *Six* hours in chemical laboratory are required of those students who intend to elect the course in pharmacy.

IN CHEMISTRY AND METALLURGY.

JUNIOR CLASS.

First Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 107	3
Physics	Academic 504	3
Industrial Chemistry	Agricultural 102a	4
Organic Chemistry	Agricultural 103a	2
Mineralogy Laboratory	Engineering 401	4
Geology	Engineering 403	2
Military Science	Academic 601	1
Chemical Laboratory	Agricultural 110b	9
Military Drill	Academic 600	3

Second Term.

English	Academic 107	3
Physics	Academic 504	3
Industrial Chemistry	Agricultural 102a	4
Organic Chemistry	Agricultural 103a	2
Mineralogy Laboratory	Engineering 402	4
Geology	Engineering 403	2
Military Science	Academic 601	1
Chemical Laboratory	Agricultural 110b	9
Military Drill	Academic 600	3

Third Term.

English	Academic 107	3
Physics	Academic 504	3
Industrial Chemistry	Agricultural 102a	4
Organic Chemistry	Agricultural 103a	2
Mineralogy Laboratory	Engineering 402	4
Geology	Engineering 403	2
Military Science	Academic 602	1
Chemical Laboratory	Agricultural 110b	9
Military Drill	Academic 600	3

SENIOR CLASS.

First Term.

English	Academic 108	2
Physics (a)	Academic 505	2
French (b)	Academic 301a	4
Economic Geology	Engineering 408	2
Metallurgy	Agricultural 104	2
Engineering Chemistry	Agricultural 106	1
Theoretical Chemistry	Agricultural 107	2
Military Science	Academic 603	1
Chemical Lab. and Assaying	Agricultural 110d	8
Metallurgical Designing or Metallurgical Laboratory.		3

Second Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 108	2
Physics (a)	Academic 505	2
French (b)	Academic 301b	3
Economic Geology	Engineering 408	2
Metallurgy	Agricultural 104	2
Engineering Chemistry	Agricultural 106	1
Theoretical Chemistry	Agricultural 107	2
Military Science	Academic 604	1
Chemical Lab. and Assaying	Agricultural 110d	8
Metallurgical Designing or Metallurgical Laboratory.		3

Third Term.

Political Economy	Academic 112	2
Astronomy (a)	Academic 506	2
French (b)	Academic 301c	4
Economic Geology	Engineering 408	2
Metallurgy	Agricultural 104	2
Engineering Chemistry	Agricultural 106	1
Theoretical Chemistry	Agricultural 107	2
Military Science	Academic 605	1
Chemical Lab. and Assaying.	Agricultural 110d	8
Metallurgical Designing or Metallurgical Laboratory.		3

(a) Or Physical Chemistry. (b) Or German.

IN AGRICULTURE.

JUNIOR CLASS.

First Term.

English (a)	Academic 107	3
Physics	Academic 504	3
Organic Chemistry	Agricultural 103b	2
Botany and Bot. Laboratory	Agricultural 302	6
Veterinary Science and Vet. Laboratory (b)	Agricultural 502	5
Agriculture and Agr. Laboratory (c)	Agricultural 204	4
Horticulture and Hort. Laboratory (c)	Agricultural 601	6
Military Tactics	Academic 601	1
Military Drill	Academic 600	3

Second Term.

Subject	*Number of Course*	*Hours per Week*
English (a)	Academic 107	3
Physics	Academic 504	3
Agricultural Chemistry	Agricultural 105	3
Botany and Bot. Laboratory	Agricultural 302	6
Veterinary Science and Vet. Laboratory (b)	Agricultural 502	5
Animal Industry and An. Ind. Laboratory (c)	Agricultural 804	4
Horticulture and Hort. Laboratory (c)	Agricultural 602	6
Military Tactics	Academic 601	1
Military Drill	Academic 600	3

Third Term.

English (a)	Academic 107	3
Physics	Academic 504	3
Agricultural Chemistry	Agricultural 105	3
Botany and Bot. Laboratory	Agricultural 302	6
Veterinary Science and Vet. Laboratory (b)	Agricultural 502	5
Animal Industry and An. Ind. Laboratory (c)	Agricultural 804	6
Agriculture and Agr. Laboratory (c)	Agricultural 205	4
Military Tactics	Academic 602	1
Military Drill	Academic 600	3

(a), (b) French or German may be substituted.

(c) Six hours of chemical laboratory, Agricultural 110b, may be substituted.

SENIOR CLASS.

The studies of the course in agriculture are divided into five groups, as follows:

Group "A", agriculture: Gives special prominence to crops, soils, and farm machinery.

Group "B", horticulture: Special reference to fruit growing, trucking, and landscape gardening.

Group "C", animal industry: Gives special prominence to all work pertaining to live stock.

Group "D", agricultural chemistry: Especially designed to prepare students for experiment station and fertilizer control work.

Group "E", botany: Designed to train students for station work or to pursue advanced work in botany.

The elective work in each group must be approved at the beginning of the senior year by the president and the professor in charge, and with the required work must aggregate at least twenty-one hours counting two hours laboratory equal to one hour.

The giving of an elective course will be optional with the professor in charge unless it be elected by at least four students.

GROUP "A", AGRICULTURE.

First Term.

Subject	*Number of Course*	*Hours per Week*
Agriculture & Agricultural Laboratory	Agricultural 206	4
Entomology and Entomology Laboratory	Agricultural 701, 702	5
Geology	Engineering 403	2
Military Science	Academic 603	1
German (a)	Academic 305a	4
Thesis.	Agricultural 209	2

Second Term.

Agriculture & Agricultural Laboratory	Agricultural 212	4
Forestry and Forestry Lab.	Agricultural 608	5
Geology	Engineering 403	2
Military Science	Academic 604	1
German (a)	Academic 305b	3
Thesis	Agricultural 209	2

Third Term.

Agriculture & Agricultural Laboratory	Agricultural 208	4
Entomology and Entomology Laboratory	Agricultural 703, 704	5
Geology	Engineering 403	2
Military Science	Academic 605	1
German (a)	Academic 305c	4
Thesis	Agricultural 209	2

(a) French may be substituted.

Electives. The equivalent of at least seven hours from the following subjects:

First Term.

Farm Machinery and Farm Laboratory	Agricultural 210	5
Animal Industry and Animal Industry Laboratory	Agricultural	4
Horticulture and Horticultural Laboratory	Agricultural 603	5
Botany and Botany Laboratory	Agricultural 305	6
Veterinary Science and Veterinary Laboratory	Agricultural 502	5
Industrial Chemistry	Agricultural 102a	3
Organic Chemistry	Agricultural 103a	2
French	Academic 302a	4
Chemical Laboratory	Agricultural 110	6

Second Term.

Subject	*Number of Course*	*Hours per Week*
Soils and Soils Laboratory	Agricultural 211	5
Animal Industry and Animal Industry Laboratory	Agricultural 30	4
Horticulture	Agricultural 604	3
Horticultural Lab	Agricultural 607	4
Botany and Botany Lab	Agricultuarl 306	6
Veterinary Science and Veterinary Laboratory	Agricultural 502	5
Industrial Chemistry	Agricultural 102a	3
Organic Chemistry	Agricultural 103a	2
French	Academic 302b	4
Chemical Laboratory	Agricultural 110	6

Third Term.

Soils and Soils Laboratory	Agricultural 211	5
Animal Industry and Animal Industry Laboratory	Agricultural	4
Horticulture	Agricultural 605	3
Horticultural Laboratory	Agricultural 606	4
Botany and Botany Laboratory	Agricultural 307	6
Veterinary Science and Veterinary Laboratory	Agricultural 502	5
Industrial Chemistry	Agricultural 102a	3
Organic Chemistry	Agricultural 103a	2
French	Academic 302c	4
Chemical Laboratory	Academic 110	6

GROUP "B", HORTICULTURE.

First Term.

Horticulture	Agriculture 603	3
Horticultural Laboratory	Agriculture 603	4
Entomology and Entomology Laboratory	Agricultural 701. 702	5
Geology	Engineering 403	2
Military Science	Academic 603	1
German (a)	Academic 306a	4
Thesis	Agricultural 609	2

Second Term.

Horticulture	Agricultural 604	3
Horticultural Laboratory	Agricultural 607	4
Forestry and Forestry Laboratory	Agricultural 608	5
Geology	Engineering 403	2
Military Science	Academic 604	1
German (a)	Academic 306b	4
Thesis	Agricultural 609	2

Third Term.

Subject	Number of Course	Hours per Week
Horticulture	Agricultural 605	3
Horticultural Laboratory	Agricultural 606	4
Entomology and Entomology Laboratory	Agricultural 703, 704	5
Geology	Engineering 403	2
Military Science	Academic 605	1
German (a)	Academic 306c	4
Thesis	Agricultural 609	2

Electives. The equivalent of at least five hours from the subjects as listed under Group "A."

(a) French or English and Political Economy and one additional subject may be substituted.

GROUP "C", ANIMAL INDUSTRY.

First Term.

Animal Industry	Agricultural 807	2
Animal Industry Laboratory	Agricultural 809	4
Entomology and Entomology Laboratory	Agricultural 701, 702	5
Geology	Engineering 403	2
Military Science	Academic 603	1
German (a)	Academic 306a	4
Thesis		

Second Term.

Animal Industry	Agricultural 806	2
Animal Industry Laboratory	Agricultural 808	4
Forestry (b)	Agricultural 608	3
Geology	Engineering 403	2
Military Science	Academic 604	1
German (a)	Academic 306b	4
Thesis		

Third Term.

Animal Industry	Agricultural	2
Animal Industry Laboratory	Agricultural	4
Entomology and Entomology Laboratory	Agricultural 703, 704	5
Geology	Engineering 403	2
Military Science	Academic 605	1
German (a)	Academic 306c	4
Thesis		

Electives. The equivalent of at least six hours from the subjects listed under Group "A", or the Third Year Course in Veterinary Medicine.

(a) French may be substituted.
(b) Meat and milk inspection may be substituted.

GROUP "D", AGRICULTURAL CHEMISTRY.

First Term.

Subject	*Number of Course*	*Hours per Week*
Chemical Laboratory	Agricultural 110	6
Entomology	Agricultural 701, 702	5
Geology	Engineering 403	2
Military Science	Academic 603	1
German (a)	Academic 306a	4

Second Term.

Chemical Laboratory	Agricultural 110	6
Forestry and Forestry Lab.	Agricultural 608	5
Geology	Engineering 403	2
Military Science	Academic 604	1
German (a)	Academic 306b	4

Third Term.

Chemical Laboratory	Agricultural 110	6
Entomology	Agricultural 703, 704	5
Geology	Engineering 403	2
Military Science	Academic 605	1
German (a)	Academic 306c	4

Electives. The equivalent of at least seven hours from the subjects as listed under Group "A".

(a) French may be substituted.

GROUP "E", BOTANY.

First Term.

German (a)	Academic 306a	4
Geology	Engineering 403	2
Organic Chemistry	Agricultural 103a	2
Botany and Botany Lab.	Agricultural 305	6
Military Science	Academic 603	1
Thesis		

Second Term.

German (a)	Academic 306b	4
Geology	Engineering 403	2
Organic Chemistry	Agricultural 103a	2
Botany and Botany Laboratory	Agricultural 306	6
Military Science	Academic 604	1
Thesis		

Third Term.

German (a)	Academic 306c	4
Geology	Engineering 403	2

Subject	*Number of Course*	*Hours per Week*
Organic Chemistry	Agricultural 103a	2
Botany and Botany Laboratory	Agricultural 307	6
Military Science	Academic 605	1
Thesis		

Electives. The equivalent of at least three hours from the subjects as listed under Group "A."

(a) French may be substituted.

TWO-YEAR COURSE IN AGRICULTURE.

FIRST YEAR.

First Term.

Dairying	Agricultural 802	2
Veterinary Science	Agricultural 502	5
Chemistry	Agricultural 101	3
English	Academic 101a	3
Physiology	Agricultural 501	2
Livestock Management	Agricultural 810	2
Butter Making and Milk Testing	Agricultural 802	4
Chemical Laboratory	Agricultural 110a	2
Mechanic Arts	Engineering 301	6
Military Drill (a)	Academic 600	3

Second Term.

Soils and Cultivation	Agricultural 202	2
Veterinary Science	Agricultural 502	5
Chemistry	Agricultural 101	3
English	Academic 101b	3
Physiology	Agricultural 501	2
Stock Feeding	Agricultural 804	2
Judging Livestock	Agricultural 803	4
Chemical Laboratory	Agricultural 110a	2
Mechanic Arts and Farm Machinery	Agricultural 210 Engineering 302	6
Military Drill (a)	Academic 600	3

Third Term.

Forage Plants	Agricultural 205	2
Veterinary Science	Agricultural 502	5
Chemistry	Agricultural 101	3
English	Academic 101b	3
Physiology	Agricultural 501	2
Breeds of Livestock	Agricultural 801	2
Botany and Botany Laboratory	Agricultural 301	7
Farm Practice	Agricultural 203, 204	4

Subject	Number of Course	Hours per Week
Chemical Laboratory	Agricultural 110a	2
Military Drill (a)	Academic 600	3

(a) Special agricultural students who are of age are excused from drill.

NOTE.—In case students in agriculture have conflicts in schedule, satisfactory substitutes will be accepted.

SECOND YEAR.

First Term.

Cotton Culture and Grading	Agriculture 206	2
Animal Breeding	Agricultural 806	2
Veterinary Science	Agricultural 502	5
Insects	Agricultural 701, 702	3
Agricultural Chemistry	Agricultural 105	3
Botany and Botany Laboratory	Agricultural 302 Agricultural 204	6 2
Corn	Agricultural 204	2
Cotton	Agricultural 206	4
Chemical Laboratory	Agricultural 110a	6

Second Term.

Miscellaneous Farm Crops	Agricultural 212	2
Stock Feeding	Agricultural 804	2
Veterinary Science	Agricultural 502	5
Fruit Growing	Agricultural 602	3
Agricultural Chemistry	Agricultural 105	3
Plant Breeding	Agricultural 302	6
Chemical Laboratory	Agricultural 110b	6
Horticultural Laboratory	Agricultural 607	4

Third Term.

Farm Management	Agricultural 208	2
Bacteriology	Agricultural 508	6
Vegetable Gardening	Agricultural 604	3
Industrial Chemistry	Agricultural 102	3
Diseases of Plants	Agricultural 302	6
Chemical Laboratory	Agricultural 110b	6
Horticultural Laboratory	Agricultural 606	4

IN PHARMACY.

JUNIOR CLASS.

First Term.

English (a)	Academic 107	3
Physics	Academic 504	3
Botany and Botany Laboratory	Agricultural 303	5

Subject	*Number of Course*	*Hours per Week*
Pharmacy	Agricultural 401a	3
Pharmaceutical Laboratory	Agricultural 401b	6
Pharmacognosy	Agricultural 402	4
Chemical Laboratory	Agricultural 110b	6
Military Tactics	Academic 601	1
Military Drill	Academic 600	3

Second Term.

English (a)	Academic 107	3
Physics	Academic 504	3
Botany and Botany Laboratory	Agricultural 303	5
Pharmacy	Agricultural 401a	3
Pharmaceutical Laboratory	Agricultural 401b	6
Pharmacognosy	Agricultural 402	4
Chemical Laboratory	Agricultural 110a	6
Military Tactics	Academic 601	1
Military Drill	Academic 600	3

Third Term.

English (a)	Academic 107	3
Physics	Academic 504	3
Botany and Botany Laboratory	Agricultural 303	5
Pharmacy	Agricultural 401a	3
Pharmaceutical Laboratory	Agricultural 401b	6
Pharmacognosy	Agricultural 402	4
Chemical Laboratory	Agricultural 110a	6
Military Tactics	Academic 602	1
Military Drill	Academic 600	3

(a) French or German may be substituted.

SENIOR CLASS.

First Term.

Bacteriology and Bacteriology Laboratory	Agricultural 508	6
Organic Chemistry	Agricultural 103a	2
Pharmacy	Agricultural 403a	5
Prescriptions	Agricultural 404	4
Military Science	Academic 603	1
Chemical Laboratory	Agricultural 110c	6
Pharmaceutical Laboratory	Agricultural 403b	15

Second Term.

Bacteriology and Bact. Lab.	Agricultural 508	6
Organic Chemistry	Agricultural 103a	2
Pharmacy	Agricultural 403a	5
Prescriptions	Agricultural 404	4
Military Science	Academic 604	1
Chemical Laboratory	Agricultural 110e	6
Pharmaceutical Laboratory	Agricultural 403b	15

Third Term.

Subject	*Number of Course*	*Hours per Week*
Therapeutics	Agricultural 521	3
Organic Chemistry	Agricultural 103a	2
Pharmacy	Agricultural 403a	5
Prescriptions	Agricultural 404	4
Military Science	Academic 605	1
Toxicology	Agricultural 110e	5
Urinalysis	Agricultural 517	3
Pharmaceutical Laboratory	Agricultural 403b	15

TWO-YEAR COURSE IN PHARMACY.

FIRST YEAR.

First Term.

English	Academic 101a	3
General Chemistry	Agricultural 101	3
Physiology	Agricultural 501	2
Pharmacy	Agricultural 401a	3
Pharmacognosy	Agricultural 402	4
Chemical Laboratory	Agricultural 110a,b	8
Pharmaceutical Laboratory	Agricultural 401b	6
Military Drill	Academic 600	3

Second Term.

English	Academic 102b	3
General Chemistry	Agricultural 101	3
Physiology	Agricultural 501	2
Pharmacy	Agricultural 401a	3
Pharmacognosy	Agricultural 402	4
Chemical Laboratory	Agricultural 110a,b	8
Pharmaceutical Laboratory	Agricultural 401b	6
Military Drill	Academic 600	3

Third Term.

Botany and Botanical Lab.	Agricultural 301	7
General Chemistry	Agricultural 101	3
Physiology	Agricultural 501	2
Pharmacy	Agricultural 401a	3
Pharmacognosy	Agricultural 402	4
Chemical Laboratory	Agricultural 110a,b	8
Pharmaceutical Laboratory	Agricultural 401b	6
Military Drill	Academic 600	3

SECOND YEAR.

First Term.

Pharmacy	Agricultural 403a	5
Prescriptions	Agricultural 404	3
Pharmaceutical Laboratory	Agricultural 403b	15
Organic Chemistry	Agricultural 103a	2
Chemical Laboratory	Agricultural 110c	6

Subject	*Number of Course*	*Hours per Week*
Bacteriology	Agricultural 508	6
Botany and Bot. Laboratory	Agricultural 303	5
Military Drill	Academic 600	3

Second Term.

Pharmacy	Agricultural 403a	5
Prescriptions	Agricultural 404	3
Pharmaceutical Laboratory	Agricultural 403b	15
Organic Chemistry	Agricultural 103a	2
Chemical Laboratory	Agricultural 110c	6
Bacteriology	Agricultural 508	6
Botany and Bot. Lab.	Agricultural 303	5
Military Drill	Academic 600	3

Third Term.

Pharmacy	Agricultural 403a	5
Prescriptions	Agricultural 404	3
Pharmaceutical Laboratory	Agricultural 403b	15
Organic Chemistry	Agricultural 103a	2
Toxicology	Agricultural 110e	7
Therapeutics	Agricultural 521	3
Botany and Bot. Lab.	Agricultural 303	5
Military Drill	Academic 600	3

THREE-YEAR COURSE IN PHARMACY.

In the first and second years the same studies are prescribed as in the Two Year Course.

Third Year.

First Term.

Pharmaceutical Chemistry and Laboratory	Agricultural 405	20
Chemistry and Chemical Laboratory	Agricultural 107, 110	15
Bacteriological Laboratory	Agricultural 508	3

Second Term.

Pharmaceutical Chemistry and Laboratory	Agricultural 405	20
Chemistry and Chemical Laboratory	Agricultural 107, 110	15
Bacteriological Laboratory	Agricultural 508	3

Third Term.

Pharmaceutical Chemistry and Laboratory	Agricultural 405	20
Chemistry and Chemical Laboratory	Agricultural 107, 110	15
Bacteriological Laboratory	Agricultural 508	3

THREE-YEAR COURSE IN VETERINARY MEDICINE.

FIRST YEAR.

First Term.

Subject	*Number of Course*	*Hours per Week*
General Chemistry	Agricultural 101	3
Physiology	Agricultural 501	2
Physics	Academic 501	3
Anatomy and Anat. Lab.	Agricultural 506	2
Microscopy	Agricultural 503	5
Live Stock Management	Agricultural 810	2
Chemical Laboratory	Agricultural 110b	6
Military Drill	Academic 600	3

Second Term.

General Chemistry	Agricultural 101	3
Physiology	Agricultural 501	2
Physics	Academic 501	3
Anatomy and Anat. Lab.	Agricultural 506	14
Histology	Agricultural 504	5
Stock Management	Agricultural 810	2
Chemical Laboratory	Agricultural 110b	6
Military Drill	Academic 600	3

Third Term.

General Chemistry	Agricultural 101	3
Physiology	Agricultural 501	2
Anatomy and Ant. Lab	Agricultural 506	14
Embryology	Agricultural 505	5
Feeding Live Stock	Agricultural 804	2
Chemical Laboratory	Agricultural 110b	6
Military Drill	Academic 600	3

SECOND YEAR.

First Term.

Botany	Agricultural 304	2
Pharmacy	Agricultural 403a	5
Veterinary Physiology	Agricultural 503	2
Bacteriology and Bact. Lab.	Agricultural 508	6
Obstetrics	Agricultural 510	2
Veterinary Medicine	Agricultural 522	3
Anatomy and Clinical Lab.	Agricultural 506, 520	12
Military Drill	Academic 600	3

Second Term.

Botany	Agricultural 304	2
Pharmacy	Agricultural 403a	5
Veterinary Physiology	Agricultural 503	2
Bacteriology, Pathology and Laboratory	Agricultural 508, 509	6
Obstetrics and Surgery	Agricultural 510	2

Subject	Number of Course	Hours per Week
Veterinary Medicine	Agricultural 522	3
Anatomy and Clinic Lab.	Agricultural 506, 520	12
Military Drill	Academic 600	3

Third Term.

Subject	Number of Course	Hours per Week
Botany	Agricultural 304	2
Pharmacy	Agricultural 403a	5
Veterinary Physiology	Agricultural 503	2
Therapeutics	Agricultural 521	3
Surgery	Agricultural 519	3
Veterinary Medicine	Agricultural 522	3
Pathology and Path. Lab.	Agricultural 509	6
Anatomy and Clinic Lab.	Agricultural 506, 520	12
Military Drill	Academic 600	3

THIRD YEAR.

First Term.

Subject	Number of Course	Hours per Week
Dairying	Agricultural 802	2
Stock Breeding	Agricultural 806	2
Therapeutics	Agricultural 521	3
Surgery	Agricultural 519	2
Veterinary Medicine	Agricultural 522	3
Infectious Diseases	Agricultural 513	2
Meat Inspection	Agricultural 515	2
Anatomy and Clinic Lab.	Agricultural 506, 520	12
Thesis	Agricultural 518	4

Second Term.

Subject	Number of Course	Hours per Week
Surgical Exercises	Agriculture 511	2
Therapeutics	Agricultural 521	3
Surgery	Agricultural 519	2
Veterinary Medicine	Agricultural 522	3
Infectious Diseases	Agricultural 518	3
Meat Inspection	Agricultural 515	2
Animal Parasites	Agricultural 514	2
Anatomy and Clinic Lab.	Agricultural 506, 520	12
Thesis	Agricultural 518	4

Third Term.

Subject	Number of Course	Hours per Week
Toxicology	Agricultural 110e	7
Urinalysis	Agricultural 517	3
Surgery	Agricultural 519	2
Veterinary Medicine	Agricultural 522	3
Milk Inspection	Agricultural 516	3
Animal Parasites	Agricultural 514	2
Anatomy and Clinic Lab.	Agricultural 506, 520	12
Thesis	Agricultural 518	4

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SCHEDULE OF EXERCISES

ours	MONDAY	TUESDAY.	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY.
irst 8-9	2. Arch. History. 4. Algebra. 3. Latin. 2. Pharmacy. 2. Mech. Engineering. 1. and 2. Drawing. 1. Elec. Engineering. 1. Botany. 1. German. 1. Bacteriology. 1. An. Chem. (Mining) 2. Bacteriology (1, 2.). 2. Gen. Pathology. (2, 3). 1. Vet. Medicine (1, 2).	2. Graphics. 4. Geometry. 3. Agriculture (2, 3). 3. An. Industry (1). 3. Latin. 2. Mineralogy. 2. German. 2. Botany. 1. and 2. Drawing. 1. Elec. Engineering. 2. Machine Design. 2. Obstetrics (1, 2). 1. Infectious Diseases (1, 2).	2. Graphics. 4. Algebra. 3. Latin. 2. Pharmacy. 2. Vet. Science. 2. Mech. Engineering. 1. Botany. 1. and 2. Drawing. 1. Elec. Engineering. 1. German. 1. Dairy Farming (2). 3. Ext. Anatomy. 1. Milk Insp. (3). 1. Inf. Diseases (1, 2).	4. Geometry. 3. Latin. 3. Chemistry. 2. German. 2. Botany. 2. Mech. Engineering. 2. Mineralogy. 1. and 2. Drawing. 1. Elec. Engineering. 1. Therapeutics (1, 2). 3. Histology.	2 Theory of Arch. 4. Algebra. 3. Latin. 2. Pharmacy. 2. Veterinary Science. 1. and 2. Drawing. 1. Elec. Engineering. 1. German. 2. Machine Design. 1. Inf. Disease (1, 2). 3. Ext. Anatomy. 1. Milk Insp. (3).	Exercises in Elocution. 1. Farm Machinery (1). 1. Soils (2, 3). 2. Pharmacy.
cond 9-10	4. English. 3. Chemistry. 2. Civil Engineering. 1. Elec. Engineering. 2. Min. Engineering. 2. Latin. 1. Calculus. 1. Botany Lab'y. 1. Bacteriology. 1. An. Industry Lab'y. 2. Bacteriology (1, 2). 2. Gen. Pathology (2, 3) 1. Surgery (1, 2).	4. History. 3. Physiology. 3. Descriptive Geometry. 2. Elec. Engineering. 2. Civil Engineering 1. Mech. Engineering. 2. Min. Engineering. 2. Botanical Lab'y. 1. Botany. 1. French. 1. Agriculture. 2. Mech. Design (M.E.) 1. Metallurgy. 3. Histology.	4. English. 3. Chemistry. 2. Civil Engineering. 2. Elec. Engineering. 2. Min. Engineering. 2. Latin. 2. An. Industry (3). 2. Horticulture (1, 2). 1. Calculus. 1. Pharmacognosy. 1. Botany Lab'y. 3. Histology. 1. Vet. Medicine. 2. Surgery (3).	4 History. 3. An. Industry (1). 3. Agriculture (2, 3). 2. Civil Engineering. 2. Botany. 2. Elec. Engineering. 1. Mech. Engineering. 2. Min. Engineering. 4. Botany. 1. French. 1. Veterinary Science. 1. Machine Design. 1. Metallurgy. 2. Arch. History. 3. Histology. 1. Vet. Medicine.	4. English. 3. Chemistry. 2. Civil Engineering. 2. Latin. 2. Machine Design. 2. Min. Engineering. 2. Horticulture (1, 2). 2. An. Industry. (3). 1. Calculus. 1. Veterinary Sci. 2. Vet. Medicine.	Military Drill. 1. Farm Machinery. 1. Soils (2, 3). 1. Arch Drawing. 2. Arch. Drawing. 1. Machine Design. 1. Eng. Chemistry.
hird 10-11	4. Agriculture (3). 3. English. 2. Physics. 1. Civil Engineering. 1. Botany Lab'y. 1. Latin. 1. Bacteriology. 1. An. Industry Lab'y. 1. Arch. Eng'n. 2. Bacteriology (1, 2). 2. Gen. Path. (2, 3). 1. Therapeutics (2, 3)	2. Specifications and Bldg. Materials. 4. English. 3. Botany (3). 3. History. 3. Ele. Mechanics (3). 2. Agricultural Chem. 2. French. 2. Machine Design. 1. Telephone Eng'n. 1. Horticulture. 1. Elec. Engineering. (Min. and Mech.) 1. Animal Industry. 1. Pharmacognosy. 1. Civil Engineering. 1. Botany. 3. Animal Ind. 1. Meat Inspection.	4. Agriculture (3). 3. English. 2. Physics. 1. Latin. 1. Civil Engineering. 1. Botany (Lab'y.) 1. Engin. Contracts. 1. Entomology (1, 3). 1. Forestry (2). 1. Arch. Eng'n. 1. Therapeutics (1, 2). 2. Therapeutics (3).	2. Spec. and Building Materials. 4. English. 3. History. 3. Botany. (3). 3. Ele. Mechanics (3). 2. Agri. Chemistry. 2. French. 2. Prac. Machinery. 1. Telephone Eng'r. 1. Horticulture. 1. Civil Engineering. 1. Elec. Engineering. (Min. and Mech.) 1. Animal Industry. 1. Pharmacognosy. 1. Botany. 3. Histology. 1. Vet. Medicine.	4. History (3). 3. English. 2. Physics. 1. Civil Engineering. 1. Pharmacognosy. 1. Horticulture. 1. Arch. Engineering. 2. Therapeutics (3). 2. Obstetrics (1, 2).	Mechanic Arts. Chemical Laboratory. Elec. Laboratory. Physical Laboratory. Veterinary Clinics. Field, Civil and Mining Engineering. 1. Farm Machinery (1). 1. Soils (2, 3). 3. Surveying (3). 1 and 2. Arch. Drawing 1. Machine Design. 1, 2, 3. Clinics.
ourth 1-12	3. Arch. Drawing. 4. Agriculture (3). 4. Physics. (1, 2). 4. Mechanic Arts. 4. Latin (1, 2). 3. Drawing. 2. Mathematics. 2. Chemistry. (Ind.). 2. Pharmacognosy. 1. English (1, 2). 1. Pol. Econ. (2, 3). 2. Chemistry (Org.). 2. Chem. (Agr.) (2, 3). 1. Botany. 2. Vet. Medicine.	3. Arch Drawing. 4. Latin. 3. Drawing. 2. Agriculture (1, 3). 2. An. Industry (2). 2. Mathematics. 2. Chemistry (Org.) 2. Pharmacognosy. 1. Physics. 1. Bacteriology. 1. Mental Science. 1. Farm Machin. (1). 1. Soils (2, 3). 2. Vet. Physiology.	2. Chem. Agr. (2, 3). 2. Chem. Org. (2). 4. Physics (1, 2). 4. Latin (3). 4. Mechanic Arts. 4. Agriculture (3). 3. History. 3. Botany (3). 3. Ele. Mechanics (3). 2. Mathematics. 2. Chemistry (Ind.) 2. Pharmacognosy. 1. English (1, 2). 1. Pol. Econ. (3). 1. Botany. 2. Gen. Pathology (2, 3) 1. Therapeutics Ph. (3)	4. Latin. 3. Physiology. 2. Mathematics. 2. Agriculture (1, 3). 2. An. Industry (2). 2. Chemistry (Org.). 1. Physics. 1. Bacteriology. 1. Mental Science. 1. Farm Machinery (1). 1. Soils (2, 3). 3. Descript. Geometry. 2. Botany.	3. Arch. Drawing. 4. Physics (1, 2). 4. Mechanic Arts. 4. Latin (1, 2). 3. Drawing. 2. Mathematics. 2. Chemistry (Ind.). 2. Pharmacognosy. 1. Military Science. 2. Chem. Agr. (2, 3). 2. Gen. Pathology (2, 3)	1. Pharmaceutical Lab'y. 3. Mechanic Arts. Chemical Laboratory. Electrical Lab'y. Physical Laboratory. Veterinary Clinics. Field Work, Civil and Mining Engineering. 1. Machine Design. 1. and 2. Arch. Draw. 1, 2, 3. Clinics.
ifth 12-1	1. Arch. Drawing. 4. Drawing. 4. Mechanic Arts. 3. Mathematics. 2. English. 1. Mech. Engineering. 1. Agriculture. 1. French. 1. Pharmacy. 1. Min. Engineering. 1. Botany. 1. Theoret. Chemistry. 2. Vet. Physiology. 1. Meat Inspection.	2. Arch. History. 3. Mathematics. 2. English. 1. Geology. 1. Pharmacy. 1. Mech. Engineering. 3. Surveying (3). 1. Entomology (1, 3). 1. Forestry (2). 1. Therapeutics (1, 2). 2. Vet. Physiology.	4. Drawing. 4. Mechanic Arts. 3. Mathematics. 2. German. 2. Anal. Chemistry. 1. Pharmacy. 1. Min. Engineering. 1. Arch Drawing. 1. Mech. Engineering. 2. Vet. Medicine. 1. Spec. Path (1, 2). 1. Milk Insp. (3). 3. Animal Industry.	3. Mathematics. 2. English. 1. Geology. 1. Mech. Engineering. 2. Graphics. 2 Vet. Medicine. 3. Animal Industry. 1. Meat Inspection. 1. Pharmacy.	4. Drawing. 4. Mechanic Arts. 3. Mathematics. 2. Military Tactics. 1. Pharmacy. 1. Mining Engineering. 1. Theoret. Chem. 1. Dairy Farming (2). 1. Arch. Drawing. 1. Botany. 1. Mech. Engineering. 1. Surgery. 3. Histology.	3. Mechanic Arts. 4. Mechanic Arts. Chemical Laboratory. Electrical Lab'y. Veterinary Clinics. Field Work, Civil and Mining Engineering. 1, 2, 3. Clinics.
. M. 2-6	1. and 2. Arch. Drawing. 4. Mechanic Arts. 3. Mechanic Arts. 3. Physical Lab'y. 3. Descriptive Geom. 3. Field Work, Agr. 3. Botanical Lab'y. (3) 1. and 2. Field Work, Engineering. 1, 2, and 3. Chem. Lab. 1. and 2. Mach. Work. 1 and 2. Elec. Lab'y. 1. Mech. Lab'y. 2. Hort. Lab'y. (1, 2). 1. Entomology (1, 3). 1. Forestry (2). 1. Botany. 1, 2, 3, Anatomy Lab. 1-2. Clinics (1, 2). 2. Pharmacy. 1. Toxicology (3).	4. Mechanic Arts. 3. Mechanic Arts. . . 3. Descript. Geom. 1, 2. Arch. Drawing. 3. An. Ind. Lab. (1, 2). 2. Mineralogical Lab. 2. Agriculture (1, 3). 1 and 2. History. Elec. Lab. Work. Military Drill.* 1. An. Ind'y. Lab'y. (2) 1. Hort. Lab'y. 1. Botany. 1, 2, 3. Anatomy. 1, 2. Clinics.	3. Mechanic Arts. 4. Mechanic Arts. 3. Physical Lab'y. 3. Descript. Geom. 3. Field Work, Agri. 3. Botanical Lab. (3). 3. Exercises in Elocution. 1, 2, and 3. Chem. Lab. 1 and 2, Field Work, Engineering. 1 and 2, Mach. Work. 1. Mech. Laboratory. Elec. Lab Work. 1. Botany. 1, 2. Arch. Drawing. 2. An. Ind. Lab. (2). 1. An. Ind. Lab. 1, 2, 3. Anatomy. 1. Toxology (3). 1, 2. Clinics.	1. Spec. and Bldg. Materials. 4. Mechanic Arts. 3. Mechanic Arts. 3. Descript. Geom. 3. Agri. Lab. (2, 3). 1. Agriculture. 2. Mineralogy Lab'y. 3. An. Ind'y. Lab'y. (1). 2. Ele. Lab. Work. 2. Horticulture Lab. 1. and 2. History. 1. Telephone Lab'y. Military Drill* 1. Agricluture. 1. Botany. 1, 2, 3. Anatomy. 1, 2. Clinics.	4. Mechanic Arts. 3. Mechanic Arts. 3. Physical Lab'y. 3. Exercises in Elocution. 2. French. 2. Botanical Lab'y. 1, 2, and 3. Chem. Lab. 1, and 2. Field Work. Engineering. 1, and 2. Mach. Work 1. Mech Lab'y. Elec. Lab. Work. 1. Horticultural Lab'y. 2. Graphic Statics (2). 1. Machine Design. 1. Mech. Lab'y. 2. Arch. Drawing. 1, 2, 3. Anatomy. 1. Toxicology (3). 1, 2. Clinics.	

hapel service daily at 7:45 a. m. *From 4:30 to 5:30 p. m.
umbers prefixed denote classes—1 denotes senior; 2, junior, etc. Numbers affixed—(1), (2), (3), denote terms.

ACADEMIC COLLEGE

FACULTY.

CHARLES COLEMAN THACH, M. A., LL. D., President,
Professor of English and Political Economy.

GEORGE PETRIE, M. A., Ph. D., Dean,
Professor of History and Latin.

BENNETT BATTLE ROSS, M. S.,
Professor of General and Agricultural Chemistry.

JOHN EDWARD WIATT, M. A.,
Professor of Modern Languages.

JAMES POWELL COCKE SOUTHALL, M. A.,
Professor of Physics.

BENJAMIN SWEAT PATRICK, M. S.,
Commandant and Professor of Military Science.

BOLLING HALL CRENSHAW, B. S., M. A.,
Professor of Mathematics.

ALBERT HARRIS WILSON, M. S.,
Professor of Mathematics.

ROBERT L. BROWN, B. S., E. M.,
Professor of Geology and Mining Engineering.

REUBEN DAVID WEBB, M. S.,
Associate Professor of Rhetoric and Composition.

JAMES RICHARD RUTLAND, A. B.,
Librarian and Assistant Professor of English.

BERNER LEIGH SHI, C. E.,
Instructor in Mathematics and Drawing.

DALLAS TABOR HERNDON, M. S.,
Instructor in English, History, and Latin.

MICHAEL JOSEPH DONAHUE, A. B.,
Physical Director and Instructor in English and Mathematics.

CASPER CARL CERTAIN, E. E.,
Registrar and Instructor in English.

CINCINNATUS DECATUR KILLEBREW, M. S.,
Instructor in Physics.

JACOB ALLEN WALKER, B. S.,
Assistant in History and Latin.

ROBERT EDWARD HODNETTE, B. S.,
Assistant in English and Mathematics.

DEPARTMENTS

The Academic College has been organized with the following departments :

English and Political Economy.
History and Latin.
Military Science and Tactics.
Special Pedagogical Courses.
Modern Languages.
Mathematics.
Physics.

The facilities for instruction together with the laboratory equipment in each department are described under the head of "Laboratories and Facilities for Instruction," pages 10 to 22 of this catalogue.

In addition, students in the different departments of the Academic College receive instruction in departments of the other colleges as follows:

Mechanic Arts.
Drawing.
Geology.
Animal Industry.
Chemistry.
Botany.
Agriculture.

DEPARTMENTS OF INSTRUCTION

ENGLISH AND POLITICAL ECONOMY.

PRESIDENT THACH.

PROFESSOR WIATT.

ASSOCIATE PROFESSOR WEBB.

ASSISTANT PROFESSOR RUTLAND.

INSTRUCTOR HERNDON.

INSTRUCTOR CERTAIN.

ENGLISH.

OBJECTS AND METHODS.

In this department the students pursue a systematic course in the English language and literature.

Language is the avenue of approach to all knowledge; the interpretation of words is the fundamental process in education of whatsoever kind. A full course in English is, therefore, considered especially important in the technical courses of study that do not include the ancient classics. Accordingly, the course in English is continued throughout the four years of the college curriculum, three hours a week, and is made obligatory upon all students, with the exception of those pursuing the first two years of the course in Latin. In this extended drill in the grammar and literature of the English language, the endeavor is made to afford a training somewhat equivalent to the ordinary course in the classical languages.

In view of the ill preparation in languages, especially in their mother tongue, exhibited by many of the candidates for admission to the freshman class, it is deemed advisable, for the sake of honest work, to devote a portion of the first year to grounding such students in the principles of grammar.

Especial attention is given to the study of the writings themselves of leading American and British authors, since direct contact with literature is considered more profitable than information merely *about* literature.

All students before classed as regular in any course leading to a degree must conform to all the requirements in English for admission as set forth on page 53.

For requirements as to thesis and as to proficiency in English for certificates and degrees, see page 62 and 176.

THEMES AND ORATIONS.

Theory without practice is as fruitless in the study of English as in any other department of study. Practical work is indispensable to the successful teaching of English.

Besides numerous brief papers illustrative of the subject matter of the text-books, set themes or orations are *required of all students*: For the freshman class *ten* themes a year; for the sophomore *ten;* for the senior and junior classes, *three* themes or orations each.

DECLAMATIONS AND ORATIONS.

The old practice of committing pieces to memory for "speaking" is cultivated as a means, both of training in the art of thinking on the feet, and of storing the mind with the diction of finished specimens of English style.

On every Saturday morning, immediately after chapel services. oratorical exercises in declamation and in original orations are conducted by the Professor of English, in the presence of the faculty and students.

The *first and second terms* the students of the junior and sophomore classes are exercised in original orations and in declamations.

The *second and third terms* the members of the senior class read essays or deliver original orations.

COURSE OF STUDY.

FRESHMAN CLASS.

101. (*a*) A review of the elements of grammar: Text-book, Bartlett and McBain's English Grammar. *Two hours, first term.*

(*b*) A study of the formation of the language and of the meaning of words: Text-book, Anderson's study of English Words. *Two hours, second and third terms.*

102. (*a*) Composition and rhetoric: Frequent brief papers illustrating the laws studied are required, with personal conferences between the student and the instructor for the correction of individual faults. Text-book, Gardiner, Kittredge, and Arnold's Manual of Composition and Rhetoric. *Three hours, first term.*

(*b*) American literature: A study of Bryant, Longfellow, Holmes, Whittier, Poe, Lowell, and Lanier. Text-book, Page's Chief American Poets. *Three hours, second and third terms.*

SOPHOMORE CLASS.

103. (*a*) Rhetoric: Daily practice in paragraph writing and frequent exercises in narrative, description, exposition, and argument, with personal conferences for the correction of faults. Text-book, Baldwin's College Manual of Rhetoric. *Three hours, first term.*

(*b*) English prose: A critical study of specimens of all the forms of discourse. Text-book, Carpenter's Model English Prose, and Classics. *Three hours, second term.*

104. (*a*) English poetry: An interpretative study of representative poems. Text-book, Syle's From Milton to Tennyson, and various English classics. In connection with this a brief study of the various periods of English literature is taken up. Text-book, Halleck's English Literature. *Three hours, third term.*

105. Laboratory: The emphasis in the English laboratory work is upon practice, and not upon theory. Lectures are given from time to time on the few essential principles of composition, and special faults of style and errors of structure are commented on in class. Definite exercises are assigned for the practical application of the principles discussed; and through analysis of models of the forms of English prose, through the proper criticism of written exercises by the instructor, and through personal conferences with the students in all the stages of their work, an effort is made to form in the students the habit of writing with clearness and correctness. This course is intended especially for those students in Latin who do not take courses 103 and 104. *Three hours, entire year.*

106. Declamation: The sophomore class is heard weekly throughout the year in sections of ten, twice for an hour and a half in rehearsal, afterwards in the assembly hall before the body of students.

JUNIOR CLASS.

107. Lectures on the history of Engish literature; critical study of English classics, essays. Standard English poems, Macaulay, Carlyle, DeQuincey, etc. *Three hours, entire session.*

SENIOR CLASS.

108. Principles of criticism, Shakespeare's Julius Cæesar, Hamlet, Macbeth, etc. Dowden's Shakespeare, etc. *Two hours, first and second terms.*

109. Advanced composition: All regular juniors and seniors are required, in addition to the composition work incidental to the regular language course, to write one theme each term.

GRADUATE STUDENTS.

110. Postgraduate courses: The following courses have been given:

(*a*) Shakespeare: Hamlet, Othello, Macbeth, Merchant of Venice, As You Like It, Henry IV. Part I., Richard III., King John.

(*b*) Dryden: Poetical works (Christie); Essay on Dramatic Poesy (Thomas Arnold); Essay on Satire, etc., (Yonge); Saintsbury's Life of Dryden.

Pope: Poetical works (Ward); Satires (Pattison); Stephen's Life of Pope; Gosse's From Shakespeare to Pope and 18th Century Literature.

(*c*) English literature of the eighteenth century; Addison, Pope, Gray, Goldsmith, Burns, Cowper, Burke.

(*d*) American literature: Longfellow, Lowell, Poe.

(*e*) The rise and development of the English essay: Bacon, Addison, Steele, Swift, Johnson, Goldsmith, Macaulay, DeQuincey, Lamb, Carlyle.

(*f*) Milton: Poetical works (Masson); Life, Pattison, Brooks.

(*g*) Elizabethan drama: Green, Jonson, Marlowe, Webster, Beaumont, and Fletcher.

(*h*) Jacobean and Caroline literature: Browne, Herrick, Burton, Bunyan, Cowley, Vaughan, and others. *Four hours, entire year.*

111. Methods of teaching English: This course is planned especially to suit the needs of those who are now teaching English in elementary or secondary schools and those who expect to become teachers of English. It will include discussions of the existing needs in Alabama schools, general instruction in methods of study and presentation of literature, and lectures on practical methods of teaching grammar and composition, together with actual work in this subject. It will also be the purpose of the course to examine various text-books available for instruction in English and to put the student in touch with such books as he will find useful in his work and in his own development. *Two hours, third term.*

PHILOSOPHY AND POLITICAL ECONOMY.

The senior class pursue the study of intellectual science, twice a week through the year, and political economy twice a week, during the third term. The instruction in this department is by lectures in combination with text-books.

112. Intellectual science: Psychology defined. Value in relation to moral culture, education, and natural sciences. The relation of the soul to matter. The arguments of the materialist. Counter arguments. The faculties of the soul. The nature of consciousness. Sense perception. Fancy. Imagination. Nature of conceptions. Language. Judgment. Reasoning. Deduction. Induction, etc. *Porter's Intellectual Science. Two hours, entire session.*

113. Political economy: Value; production of wealth; land; labor; capital; division of labor; distribution of wealth; wages; trades union; tariff; education, etc. *Lectures by professor. Ely's Outlines of Economics. Two hours, third term.*

HISTORY AND LATIN.

PROFESSOR PETRIE.

INSTRUCTOR HERNDON.

ASSISTANT WALKER.

HISTORY.

In this department the aim is not so much to memorize facts as to understand them. Strong emphasis is laid on the fact that history is not a succession of isolated facts, but a progressive whole, each event being at once the cause and the effect of other events. The students are taught to investigate the growth of ideas and institutions, the rise and progress of great historical movements, and the reciprocal influences of men and circumstances. Frequent use is made of diagrams, photographs, charts, and maps, with which the department is well equipped. Instruction is given by text–books, lectures, and class discussion, but a constant effort is made to stimulate to wider reading and research in the library. The following courses are offered:

FRESHMAN CLASS.

201. History of the United States and of Alabama: The course consists of lectures and text-book work, and is somewhat advanced. All students who take it must have previously completed some school text-book on the history of the United States. Text-book: Elson's History of the United States. *Two hours, first and second terms; three hours, third term.*

SOPHOMORE CLASS.

202. History of modern Europe: Required of all members of the sophomore class. Some previous knowledge of the subject is desirable, but not necessary. Text-book: West's History of Modern Europe. *Three hours, first and second terms.*

203. Ancient history: An extra course intended for those who are deficient on this subject. Text-book: Myers' General History, Part I. *Once a week, one term.*

204. A brief course in recent history: Not required of any students, but those who expect to take the general course may substitute it for botany or mechanics. Text-book: West's History of Modern Europe and current periodicals. *Three times a week, third term.*

SENIOR CLASS.

205. English constitutional history: A course for one year for members of the senior class. Text-book will be announced later.

JUNIOR AND SENIOR CLASSES.

206. Historical laboratory: An opportunity for advanced work in United States history for those students of the general course who elect it as laboratory work, and for any others who are properly qualified.

The chief object kept in view is training in historical research and in the formation of independent but careful opinions based on the original sources of information, as well as on the standard authorities. Emphasis is laid on the importance of securing proper material for investigation, and every incentive is givenen to the collection and use of new documents, papers, and letters illustrative of Southern, and especially of Alabama history. The method of work is as follows: Informal lectures are given on important and suggestive points, as: The cause of the Revolution; the Constitutional Convention; the War of 1812; the Missouri Compromise; the Monroe Doctrine; Texas and Mexico; the Compromise of 1850; the Kansas Struggle; the Dred Scott Decision; Secession. After each lecture a general discussion follows and topics connected with it are assigned to the students with an outline of the points to be investigated. Documents and other sources of information are consulted. The final results are collected by each student according to his own judgment in his note-book, which is then passed in to the professor for correction and suggestion. Text-book: MacDonald's Select Statutes. *Six hours, entire session.*

GRADUATE COURSE.

207. Graduate students are expected to take part in the junior and senior discussions, and will also meet with the professor for conference about their work. Each year some special field is taken for investigation and discussion. During the session 1909-10 the topic will be the Confederation and the Constitution. Those who take history as their major study are expected to devote a large part of their time to research upon some topic upon which they can consult the original sources of information.

208. Teachers' course: Conferences every other week with those students who expect to teach history.

LATIN.

The objects kept in view in this department are: An accurate knowledge of the forms and syntax; a familiarity with Latin words, their etymology and their English derivatives; an appreciation of Latin literature and an intelligent conception of Roman history and civilization both in themselves and in their effect on the modern world.

A systematic course of instruction is given in the forms and syntax. These are taught both deductively from a grammar and inductively from the text read. Translation is constantly practiced, sometimes at sight, sometimes after being assigned for preparation. English passages based on a familiar author or illustrative of special constructions are put in Latin, both orally and in writing. Great emphasis is laid on the etymology of the words in the text read.

In connection with every author studied in class, a course of reading in English is prescribed descriptive of his life, work, and times. The historical setting and the literary value of his writings are carefully discussed and frequent comparisons are made with modern authors.

In the freshman and sophomore classes the study of the language is the chief point. In the higher classes a broader view is taken. The junior class makes a special study of Roman history and Roman historians. The senior class studies Roman poetry and Roman life.

In the senior class a brief pedagogical course is given during the third term for those who expect to be teachers of Latin. This includes work on the forms and syntax, and in Cæsar and Virgil.

The following courses are offered with the text-books named:

209. Freshman class: Exercises, Nepos, Sallust, or equivalent. Allen and Greenough's Latin Grammar. *Four hours, first and second terms; three hours, third term.*

212. Senior class: Horace, Latin literature, grammar. Allen and Greenough's Grammar, Bennett's Latin Composition. *Five hours, entire year.*

211. Junior class: Livy, Tacitus, grammar, Roman history, exercises. Allen and Greenough's Grammar, Botsford's History of Rome. *Three hours, entire year.*

212. Senior class: Horace, Latin literature, grammar. Allen and Greenough's Grammar. *Three hours, entire year.*

213. Pedagogical course: During the spring term a pedagogical course is given in Latin. It is designed chiefly, but not exclusively, for members of the senior class. It includes a discussion of the methods of teaching forms and syntax, as well as concrete illustrations of the way to overcome difficulties in Cæsar and Virgil.

MODERN LANGUAGES.

PROFESSOR WIATT.

The chief aim in this department is to give the student a thorough and accurate knowledge of the elementary principles of the subjects taught, and to enable him to read with facility the ordinary French and German at sight. To train the ear, acquire a correct pronunciation and some facility in speaking, all recitations are supplemented, as far as practicable, by oral exercises in the languages themselves.

FRENCH.

The following regular courses are given:

JUNIOR CLASS.

301. (*a*) A course covering the essentials of grammar and pronunciation to enable the student to begin the reading of simple French prose. This course continues through the first term, three hours a week being given to the study of grammar and one hour to pronunciation and conversation. *Four hours, first term.*

(*b*) The second term includes a course of reading in simple prose (2 hours a week), and the continuation of grammar with translations of English into French (1 hour a week). *Three hours, second term.*

(*c*) During the third term the reading of more advanced selections in prose and poetry is begun (2 hours a week); grammar and composition (1 hour a week); and pronunciation and conversation (1 hour a week). *Three hours, third term.*

SENIOR CLASS.

302. (*a*) A course in reading: Corneille and modern French plays (2 hours a week); laws of grammar and composition (1 hour a week); pronunciation and conversation (1 hour a week). *Four hours, first term.*

(*b*) The second term is given to the study of Racine and the reading of modern French literature (2 hours a week), and to continued study of the structure and syntactical features of the language in connection with translations into French. *Four hours, second term.*

(*c*) The third term includes a study of Moliere (1 hour a week); the history of French literature (1 hour a week); more advanced work in grammar and composition (1 hour a week), and pronunciation and conversation (1 hour a week). *Four hours, third term.*

303. Teachers' course: During the spring term the work of the senior class will be so modified or supplemented, as to include a short pedagogical course for students who expect to teach French. This will consist chiefly of elementary work in grammar and syntax and a study of the best methods of giving instruction in this subject. *Third term, senior year.*

GRADUATE STUDENTS.

304. Graduate course: Offered for students who wish to pursue the study of French beyond the scope to which a two-year course necessarily limits them. In addition to the authors studied in the lecture room, a wide and extensive reading of literature is prescribed.

TEXT-BOOKS.

First Year: Aldrich and Foster's French Grammar, and Locard's Supplementary Exercises. Super's Reader.

Second Year: Corneille, Racine, Moliere, selected modern French plays, Duval's Histoire de la Litterature Francaise, Fraser and Squair's French Grammar, French Composition.

GERMAN.

The following regular courses are given:

JUNIOR CLASS.

305. (*a*) A course embracing the fundamental principles of grammar and the essentials of pronunciation leading to the intelligent reading and translation of simple German texts (3 hours a week), and exercises in pronunciation and conversation (1 hour a week). *Four hours, first term.*

(*b*) In the second term the reading of simple prose is begun (2 hours a week), and grammar and composition continued (1 hour a week). *Three hours, second term.*

(c) Reading of more difficult selections of prose and poetry is begun and continued throughout the third term (2 hours a week). Grammar and composition continued (1 hour a week), and conversational exercises (1 hour a week). *Four hours, third term.*

SENIOR CLASS.

306. (*a*) A course of reading in modern German (2 hours a week); structure and syntax of the language with translations into German (1 hour a week); conversation (1 hour a week). This is continued through the first term. *Four hours, first term.*

(*b*) The second term includes a study of Schiller (2 hours a week); History of German literature (1 hour a week); composition (1 hour a week). *Four hours, second term.*

(*c*) During the third term the study of German lyrics and ballads is taken up and carried on through the term (2 hours a week). A study of German literature (1 hour a week), composition and conversation (1 hour a week). *Four hours, third term.*

307. A course covering the entire session for students from the scientific schools, including readings on various scientific subjects,

selected to meet the requirements of the class (2 hours a week), grammar and composition (1 hour a week) and conversation (1 hour a week). *Four hours, entire session.*

308. Teachers' course.

During the third term in the senior class of German, the course will be so modified, or supplemented, as to include a short pedagogical course for those students who expect to become teachers of this language.

This will consist chiefly of elementary work in grammar and syntax and a study of the best methods of giving instruction in the subject.

GRADUATE STUDENTS.

309. Advanced course: Offered for the benefit of those students who wish to pursue the study of German beyond the scope to which a two-year course necessarily limits them. Here, in addition to the authors studied in the lecture room, a wide and extensive reading of authors and literature is prescribed.

TEXT-BOOKS.

First Year: Joynes-Meissner's Grammar, Huss's German Reader.

Second Year: Schiller, Lessing, selected modern German plays, German Lyrics, Bernhardt's Deutsche Litteraturgeschichte, Whitney's German Grammar, Harris's German Composition.

MATHEMATICS.

PROFESSOR CRENSHAW.

PROFESSOR WILSON.

PROFESSOR PATRICK.

INSTRUCTOR STOKES.

INSTRUCTOR SHI.

In this department, two objects are sought to be obtained: first, mental discipline; second, a thorough knowledge of the principles of pure mathematics and their practical applications.

In all the courses, instruction in text-books is supplemented by lecturers. Solutions of original practical problems are required of the student to make him familiar with the application of principles and fomulas.

Theoretical and practical instruction is given to the sophomore class in land surveying, mapping, plotting, computing areas, etc., also in the theory and adjustment, and use of instruments, and in triangulation. The class, in sections of six or eight, devote three afternoons a week during the third term of field practice. The completion of this course, common to all students, lays the foundation for the pure and applied mathematics of the mechanical and the engineering courses.

Analytic geometry and the calculus are studied in the engineering courses. Especial attention is given to their practical applications.

The courses offered in the different classes in this department are as follows:

FRESHMAN CLASS.

401. Algebra to logarithms: *Three hours, first term; two hours, second and third terms.*

402. Geometry (completed): Especial attention to solution of original exercises. *Two hours, first term; three hours, second and third terms.*

SOPHOMORE CLASS.

403. Advanced algebra: *Five hours, one term.*
404. Plane trigonometry: *Five hours, two terms.*
405. Surveying, triangulation, mensuration: *Three hours, third term.*

JUNIOR CLASS.

406. Analytic geometry: *Three hours, entire year.*
407. Differential calculus: *Two hours, entire year.*

SENIOR CLASS.

408. Differential and integral calculus: *Three hours, first and second terms.*

GRADUATE STUDENTS.

409. Differential equations: *Two hours, entire year.*

410. Methods of teaching mathematics: The department offers a course designed for teachers of elementary mathematics, or for those who expect to make this their profession. The elementary branches of mathematics will be reviewed with especial attention to those portions presenting unusual difficulties to beginners, or which deserve emphasis on account of their importance. Methods of teaching will be briefy discussed, and the course will keep constantly in view the co-ordination of the lower branches with the higher. It will include also a brief *resume* of the history of the elementary subjects; a critical examination of the extant textbooks; and finally, an outline of a course of study in advanced mathematics to be pursued by the teacher. *The hours will be arranged later.*

TEXT-BOOKS.

Wentworth's Geometry, Wentworth's Higher Algebra, Fine's Algebra, Wentworth's Trigonometry and Surveying, Tanner & Allen's Analytic Geometry, Granville's Calculus, Johnson's Differential Equations, Cohen's Differential Equations.

PHYSICS.

PROFESSOR SOUTHALL.

INSTRUCTOR KILLEBREW.

The complete course of physics extends over four years, and is designed to give, as far as possible, an adequate and correct idea of the methods of physical science and to lay the foundation for subsequent advanced work if (as must often be the case, especially in an institution such as this) the student desires to pursue the subject further or intends to engage in any of the great engineering professions of which physics is so important a basis. The lectures are illustrated by experiments; the students are required to work numerous problems and exercises.

FRESHMAN CLASS.

501. This course is very elementary, and continues only during the first and second terms. The object in view is to make the student familiar with the fundamental principles of physics. (The text-book will be announced later.) *Three hours, first and second terms.*

SOPHOMORE CLASS.

502. This is a laboratory course, and deemed especially important for students of engineering, and of great advantage to such as intend to pursue the subsequent higher work in this department. The laboratory exercises are carefully selected, being designed to illustrate the fundamental methods and principles of physics, and, although the work is necessarily more or less elementary, at the same time such accuracy and precision as the conditions admit of are insisted upon, so that the student is expected to acquire a fairly correct idea of modern experimental investigation. The exercises consist of the fundamental measurements of length, mass, density, moduluses of elasticity, pendulum experiments, etc., together with a few more advanced experiments in connection with the similar properties of liquids and gases, and the general phenomena of heat and sound. The student is required to write a careful report of such experiments, entering the results of observation in tabular form, and plotting a curve wherever practicable;

also describing the object, apparatus, and method, and noting sources of errors, etc. Great stress is laid upon this requirement, and reports are not accepted unless they indicate that the student has done his best in every way. *Four hours, entire year.*

503. Elementary mechanics: Lectures, text-book, problems and exercises. Text-book will be announced later. *Three hours, third term.*

JUNIOR CLASS.

504. This is a more advanced course in general physics required of all candidates for a degree. The only preparation needed is a good working knowledge of mathematics through plane trigonometry. The course includes a series of illustrated lectures on the principles of dynamics, as applied to solids, liquids, gases, sound, and heat, in the order named. Written exercises are required each week. (Text-book to be announced later.) *Three hours, entire year.*

SENIOR CLASS.

505. This course, although more advanced than the junior course, and occasionally employing the higher mathematics, is a continuation of the work of the previous year. It might be called a course in elementary mathematical physics, and the subjects varying from year to year, that are treated in the lectures are such branches of physics as kinematics and dynamics, thermodynamics, electricity and magnetism, geometrical and physical optics, etc. The student is encouraged to solve difficulties for himself, and to read the standard treatises and original memoirs on the various topics that come under discussion. *Two hours, first and second terms.*

506. Astronomy: A brief course of lectures in descriptive astronomy. *Two hours, third term.*

The text-books in this class vary with the changing subjects, and will be announced by the professor each year.

GRADUATE STUDENTS.

507. Physics and mechanics: This course will be designed to meet the needs of the students who take it. It will include both theoretical and experimental work in more advanced mathematical physics, or in analytical mechanics.

508. Teachers' course: In the spring term a course will be offered for those members of the senior class who expect to teach physics. Methods of teaching the theory will be discussed and practical training will be given in the use of the laboratory for school purposes.

MILITARY SCIENCE AND TACTICS.

COL. B. S. PATRICK, Commandant.

Military science and tactics are required by law to be taught at this institution. The law is faithfully carried out by imparting to each student, not physically incapacitated to bear arms, practical instruction in the school of the soldier, of the company, and of the battalion in close and extended order, in guard mounting, inspections, parades reviews, etc.

Under section 1225, U. S. Revised Statutes, the college is provided with U. S. magazine rifle, calibre 30, model 1898, and accoutrements.

The following uniform of standard cadet gray cloth has been prescribed for dress: coat and trousers as worn for fatigue at West Point, with dark blue cadet cap. A neat and serviceable uniform can be obtained for fourteen dollars. This is less expensive than the usual clothing. All students are required to wear this uniform during the session.

The entire body of students is divided into companies. The officers are selected for military efficiency, good conduct, and scholarship. The commissioned officers will be selected from either the senior or the junior class, and promotion will depend on merit and not wholly on seniority.

A band, composed of cadets, furnishes appropriate music at all reviews and parades, and on other special occasions.

A student who has once accepted an office cannot resign it except for reasons entirely satisfactory to the president and the commandant. The resignation of an office will usually not be considered without first placing all the circumstances to the case before his parent or guardian.

Candidates for appointment or promotion may be required to stand an examination. Moral fitness, including demerits, will be considered.

Each company is officered by one captain and two first lieutenants, one second lieutenant, and a proper number of non-commissioned officers. The officers and non-commissioned officers are distinguished by appropriate insignia of rank. These appointments are confirmed by the president on nomination of the commandant.

On the graduation of each class the names of such students as have shown special aptitude for military service will be reported to the Adjutant-General of the U. S.

Army, and the names of the three most distinguished in military science and tactics will be inserted in the U. S. Army Register, and published in general orders from headquarters of the army.

The theoretical course in military science and tactics is begun in the junior and continued through the senior year.

The following are the courses prescribed:

600. Military drill: Required of all freshmen, sophomores, and juniors not physically incapacitated to bear arms. *Three hours, entire year.*

JUNIOR CLASS.

601. Infantry drill regulations: *One hour, first and second terms.*
602. Firing regulations for small arms: *One hour, third term.*

SENIOR CLASS.

603. Security and information (Wagner): *One hour, first term.*
604. Field service regulations: *One hour, second term.*
605. Manual of guard duty: *One hour, third term.*

SPECIAL COURSES FOR TEACHERS.

The courses described here are practical courses in the methods of instruction and are designed especially for teachers in Alabama schools and for those students who expect to teach after leaving college. They are given under the direction of the various departments by instructors who have had extensive experience in teaching and who are familiar with the existing conditions in the schools in the state. While in a few of the courses the instruction consists mainly of the study of texts on methods and lectures and discussions on methods of teaching specific subjects, in most of them the subject matter as well as the method is given. If there is sufficient demand, any department of the college will offer courses which may be carried on without the formal attention of the professor, in which the reading work will be outlined and supplemented by conferences from time to time. The following courses are offered:

701. In English: This course is planned especially to suit the needs of those who are now teaching English in elementary or secondary schools and those who expect to become teachers of English. It will include discussions of the existing needs in Alabama schools, general instruction in methods of study and presentation

of literature, and lectures on practical methods of teaching grammar and composition, together with actual work in this subject. It will also be the purpose of the course to examine various text-books available for instruction in English and to put the student in touch with such books as he will find useful in his work and in his own development. *Two hours, third term.*—ASSOCIATE PROFESSOR WEBB and ASSISTANT PROFESSOR RUTLAND.

702. In history: For those who expect to teach history a conference is held once every two weeks. The chief purpose is to obtain a clear understanding of the practical difficulties that confront teachers of history and to suggest the best ways to meet them. The discussions deal with both American and European history.—PROFESSOR PETRIE.

703. In Latin: During the spring term a pedagogical course is given in Latin. It is designed chiefly, but not exclusively, for members of the senior class. It includes a discussion of methods of teaching forms and syntax, as well as concrete illustrations of the ways to overcome difficulties in Cæsar and Virgil.—PROFESSOR PETRIE.

704. In French and German: During the third term in the senior class of French and German, the courses will be so modified, or supplemented, as to include a short pedagogical course for those students who expect to become teachers of these languages. This will consist chiefly of elementary work in grammar and syntax and a study of the best methods of giving instruction in these subjects. *Third term.*—PROFESSOR WIATT.

705. In mathematics: The department of mathematics offers a course designed for teachers of elementary mathematics, or for those who expect to make this their profession. The elementary branches of mathematics will be reviewed with especial attention to those portions presenting unusual difficulties to beginners, or which deserve emphasis on account of their importance. Methods of teaching will be briefly discussed, and the course will keep constantly in view the co-ordination of the lower branches with the higher. It will include also a brief *resume* of the history of the elementary subjects; a critical examination of the extant text-books; and finally an outline of a course of study in advanced mathematics to be pursued by the teacher. *The hours will be arranged later.*—PROFESSORS CRENSHAW and WILSON.

706. In physics: In the spring term a course will be offered for those members of the senior class who expect to teach physics. Methods of teaching the theory will be discussed and practical training will be given in the use of the laboratory for school purposes.—PROFESSOR SOUTHALL.

707. In library methods: The course offered by the library will have for its object the training of teachers in the formation, care, and use of a school library. Elementary instruction in the principles of dictionary cataloguing and of the decimal classification will be given, followed by a detailed study of reference books, together with practical problems worked out in the library. In ad-

dition there will be lectures on library organization and equipment, the routine work of a small library, and the selection and ordering of books. *Hours to be arranged*.—MISS SHIVERS.

708. In manual training: Courses in elementary wood work and iron work are offered. These courses will be adapted as far as possible to the individual needs of those taking the courses, and in addition to the shop work will include lectures and conferences on the organization of courses and the equipment of shops for manual training. *Hours to be arranged.*—PROFESSOR WILMORE.

709. In physical geography: In the course in general geology will be found much that is especially applicable to physical geography. It takes up a study of subterranean and surface agencies both as to their destructive, and constructive processes. The results of these processes are then taken up in a study of the topography of the surface of the earth under the following heads: The geographic cycle; land sculpture; topography as determined by faults and joints; adjustment of rivers; sea-coasts; mountain ranges. *Two hours, first and second terms.*—PROFESSOR BROWN.

710. In drawing and descriptive geometry: A course in the methods of teaching drawing and descriptive geometry is given to those who wish to prepare for teaching these branches. This course includes advanced work in the form of problems, supplemented by frequent conferences with the instructor, a complete bibliography of works on the subjects, and an extended course in reading. Those who desire to avail themselves of an opportunity to practice the teaching of the subjects, may be permitted to attend the meetings of the large classes in elementary work for the purpose of observing methods of teaching. Those who show sufficient preparation may be allowed to assist in tutoring delinquent students and those who enter conditioned. Special attention is given to the subject of drawing as taught in high school work.—PROFESSOR FULLAN.

711. In chemistry: In this course, students who have had the necessary preliminary work in chemistry will be afforded the opportunity of taking laboratory practice in experimental chemistry for lecture purposes and for the purpose of the practical study of methods of handling classes in experimental laboratory work. Advanced students can also take the course in the history of chemistry which is provided in the senior year of the course in chemistry and metallurgy. Hours to be arranged.—PROFESSOR ROSS.

712. In biology (in botany and zoology): This course embraces practical and detailed work in biology, including both laboratory practice and class work in the principles of botany and zoology as well as instruction in the methods of teaching these subjects. It is especially arranged for those who expect to teach botany and zoology in the public schools, and will be supplemented by independent reading and work assigned from time to time and by conferences with the instructor. *Hours will be arranged.*—PROFESSOR LLOYD.

713. In agriculture: Methods of teaching agriculture. This is a course of lectures and laboratory and field exercises intended

to meet the needs of those who expect to teach agriculture or nature study in the common schools and agriculture in the high schools. Special attention is given to plans for school gardens and the selection of material for illustrating the principles of agriculture, and practice will be given in conducting a number of simple demonstrations. Frequent excursions will be made to the fields.

Lectures and laboratory, *one hour each, third term.*

Teachers and those who are preparing to teach are advised to take as many of the courses in agriculture as their time permits. It is especially desirable that those intending to take the teachers' course shall have previously taken *Agriculture* 203, or its equivalent. ASSISTANT PROFESSOR DUNCAN.

714. In Physiology and hygiene: The department of physiology and veterinary medicine can give the following course of instruction to prospective Alabama teachers:

(*a*) Structure of human body and animals.
  (1) Study of cells, tissues, and organs.
  (2) How to use the smaller animals in taking naked eye anatomy.

(b) Physiological actions of the different parts and products of the animal and the human body. This embodies:
  (1) Functional tests.
  (2) Chemico-physiological tests.
  (3) Physico-physiological tests.

(c) Hygiene, embracing instruction in personal health problems.

(d) Sanitation, including health conditions of cities, homes, public buildings, farms, barns, dairies, etc.

(e) Care of animals on the farm and in the city.—PROFESSOR CARY.

715. In horticulture and school gardening: This course embraces instruction in nature study, the use of school gardens, and elementary landscape gardening. Though the course is largely practical in its nature, much attention is given to the methods of teaching elementary horticulture, the use of texts, and experiments suitable for elementary and high school grades. *Hours to be arranged.*—PROFESSOR MACKINTOSH.

COLLEGE OF ENGINEERING AND MINES

FACULTY

CHARLES COLEMAN THACH, M. A., LL. D., President,
Professor of English and Political Economy.

JOHN JENKINS WILMORE, M. E., Dean,
Professor of Mechanical Engineering, and Director of Laboratories.

BENNETT BATTLE ROSS, M. S.,
Professor of Chemistry.

ARTHUR ST. CHARLES DUNSTAN, M. E., C. E.,
Professor of Electrical Engineering.

JAMES POWELL COCKE SOUTHALL, M. A.,
Professor of Physics.

BENJAMIN SWEAT PATRICK, M. S.,
Professor of Military Science and Tactics.

GEORGE NATHAN MITCHAM, C. E., E. M.,
Professor of Civil Engineering.

BOLLING HALL CRENSHAW, B. S., M. E.,
Professor of Mathematics.

ALBERT HARRIS WILSON, M. S.,
Professor of Mathematics.

NATHANIEL CORTLANDT CURTIS, B. S.,
Professor of Architecture and Drawing.

ROBERT L. BROWN, B. S., E. M.,
Professor of Geology and Mining Engineering.

MICHAEL THOMAS FULLAN, M. E.,
Professor of Mechanical Drawing and Machine Design.

WILLIAM WELCH HILL, E. E.,
Associate Professor of Telephone Engineering.

ARTHUR McBRIDE RANSOM, M. S., M. A.,
Associate Professor of Analytical and Metallurgical Chemistry.

WILLIAM B. STOKES, M. E.,
Instructor in Mechanical Engineering.

BERNER LEIGH SHI, C. E.,
Instructor in Mathematics and Drawing.

CINCINNATUS DECATUR KILLEBREW, M. S.,
Instructor in Physics.

WILLIAM LEROY MITCHELL, M. E.,
Instructor in Mechanical Engineering.

CHARLES ROBERT HIXON, M. E.,
Instructor in Mechanical Engineering.

NATHAN BOOKER BUCHANAN, B. S.,
Assistant in Civil Engineering.

ORMAN NIMMONS POWELL, B. S.,
Assistant in Civil Engineering.

JAMES LISTER SKINNER, B. S.,
Assistant in Electrical Engineering.

OLIN CONWAY SKINNER, B. S.,
Assistant in Mechanical Engineering.

CLYDE McNEEL HOWARD, B. S.,
Assistant in Mining Engineering.

PENROSE VASS STOUT, B. S.,
Assistant in Architecture.

CARL GILBERT GAUM, B. S.,
Assistant in Drawing.

JAMES GARDNER SOMERVILLE, B. S.,
Assistant in Drawing.

DEPARTMENTS

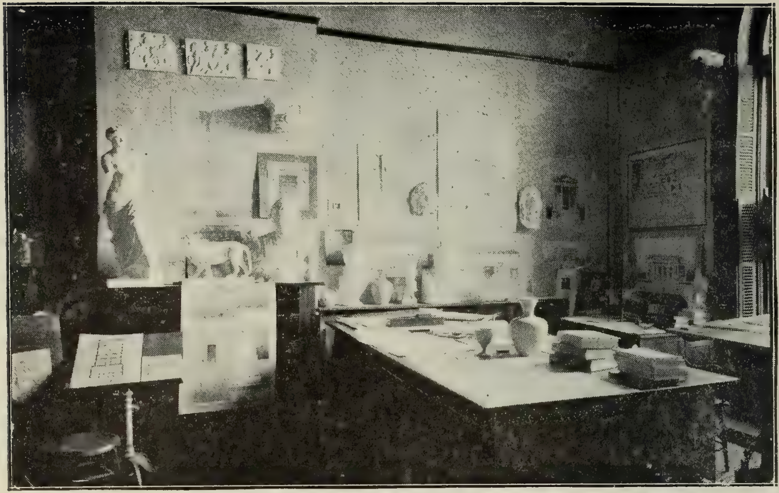
The College of Engineering and Mines has been organized with the following departments:

Civil Engineering.
Mechanical Engineering.
Electrical Engineering.
Mining Engineering.
Mechanical Drawing and Machine Design.
Architecture.

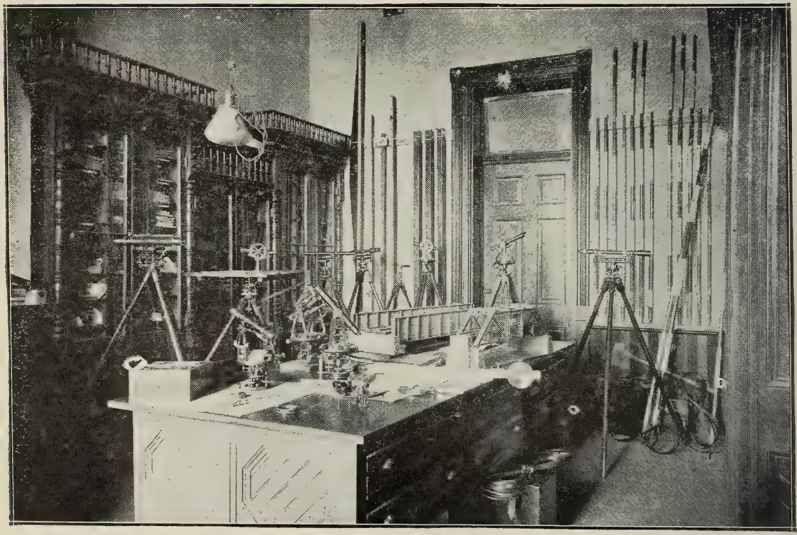
The facilities for instruction together with the laboratory equipment in each department are described under the head of "Laboratories and Facilities for Instruction" pages 10 to 22 of this catalogue.

In addition, students in the different departments of the College of Engineering and Mines receive instruction in other departments of the Institute as follows:

English.
Modern Languages.
Mathematics.
Physics.
History and Latin.
Chemistry.
Military Science and Tactics.



ARCHITECTURE.



CIVIL ENGINEERING.

CIVIL ENGINEERING.

PROFESSOR MITCHAM.

ASSISTANT BUCHANAN.

ASSISTANT POWELL.

The following courses are offered in this department:

Sophomore Class.

101. *Theory of surveying*: For students in civil and mining engineering and in agriculture. Instruction in this subject will include a course of lectures on construction, use, adjustment, and care of instruments; determination of true meridian; farm surveys; government land survey system; azimuth traverse; repetition traverse; balancing survey; theory of stadia measurements; differential and profile leveling; plane table surveys; topographical surveys. *Two hours lectures and two hours field work, third term.*

102. *Surveying between sophomore and junior years*: For students in civil and mining engineering. This course will be given at the summer surveying camp immediately after commencement. Time will be devoted to practical field work in surveying, embracing: pacing, chaining, ranging, adjustment of instruments, angle reading, farm surveying, running land lines, dividing land, azimuth traverse, repetition traverse, differential leveling, profile leveling, triangulation, topographical surveys with transit and stadia, topographical surveys with plane table, and by other methods. Daily lectures will be given to explain work to be done, and each day's work will be calculated and plotted. *Four weeks, sixty hours a week.*

JUNIOR CLASS.

103. *Theory of railroad surveying*: For students in civil and mining engineering. Reconnaissance, preliminary surveys, railroad topography, location surveys, simple, reversed, and compound curves, transition curves, turnouts and crossings, construction surveys, cross sectioning, calculation of earthwork, culverts, trestles, minor structures, maps, profiles, and estimates. *Lectures and recitations five hours a week, three hours field work, and three hours office work, first term.*

104. *Roads and pavements*: Road economics, road location, earth roads, gravel roads, broken stone roads, miscellaneous roads, street pavements, pavement economics, street design, street drainage, curbs and gutters, pavement foundations, asphalt pavements, brick pavements, cobblestone pavements, stone block pavements, wood block pavements, comparison of pavements, sidewalks. *Lectures and recitations five hours, second term and first half of third term.*

105. *Graphic statics*: Graphical resolution and composition

of forces, force polygon, equilibrium polygon, determination of resultant of concurrent, non-concurrent, and parallel forces, determination of reactions and stresses in roof and bridge trusses, bending moments in beams and pins, center of gravity, and moment of inertia. *Lectures and exercises three hours, second term.*

106. *Mechanics of materials*: General conditions of equilibrium, classification of stresses, tensile stress, compressive stresses, shearing and torsional fibre, continuous beams, horizontal shear, combined stresses, eccentric loading, live loads on beams, columns, rivets and pins, properties of materials of construction, and methods of preservation. *Lectures and recitations five hours, second half third term.*

107. *Structural drafting*: This course is thoroughly practical, and is designed to acquaint the student with details of construction and with the practice of the principal bridge and structural companies in making shop drawings, to train him in neatness and accuracy of execution, and to prepare him for the course in structural design which he will take up in the senior year. *Five hours in drafting room, entire session.*

Surveying between junior and senior years: Complete surveys for a railroad about three miles in length, including setting all stakes ready for construction; surveys for development of water power; measurement of discharge of streams; surveying for locating, relocating, and otherwise improving public roads; other problems in higher surveying that the time may permit. *Four weeks in summer surveying camp, sixty hours a week.*

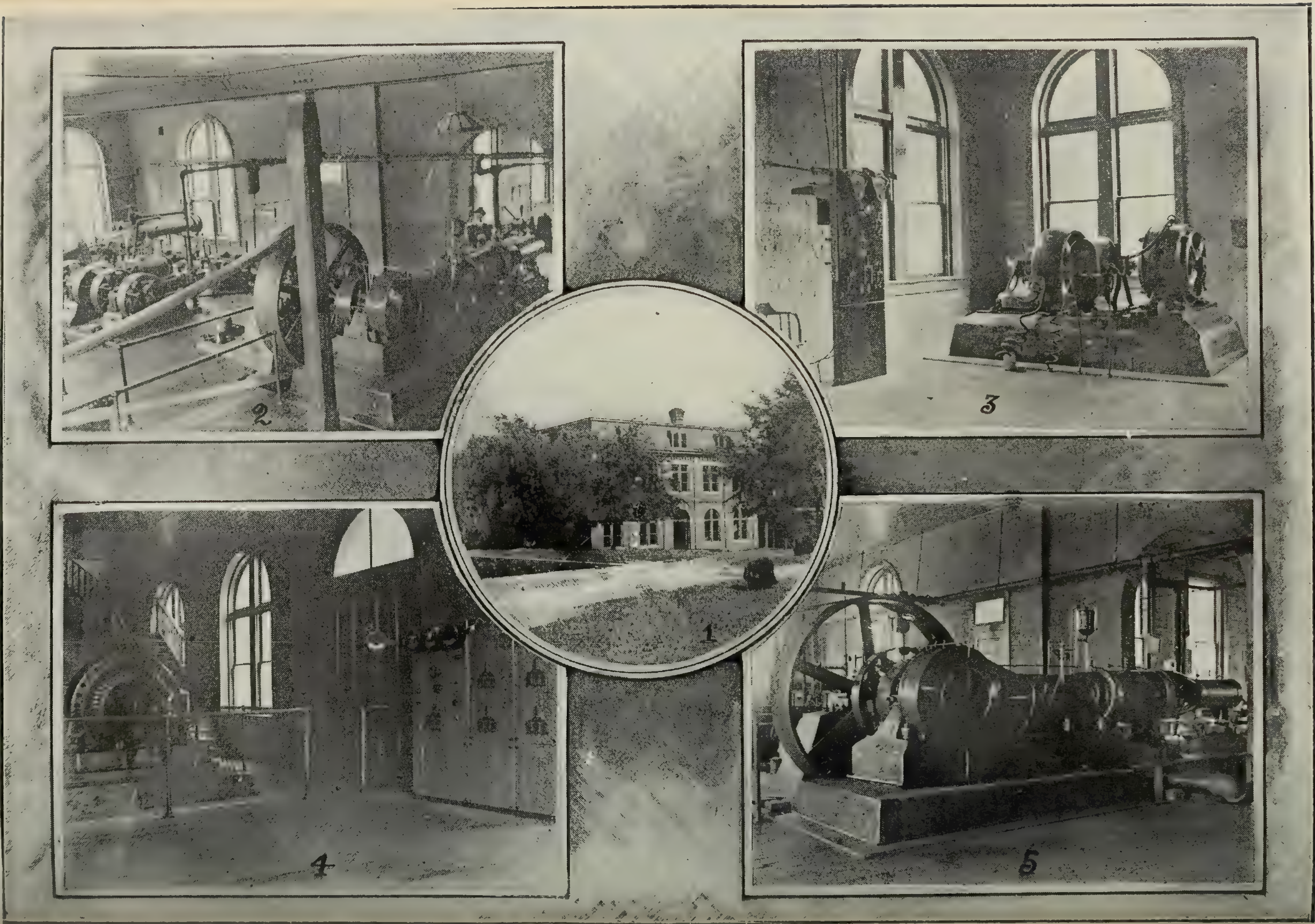
SENIOR CLASS.

108. *Theory of bridge analysis*: Solid-built beams and I-beams, plate girders, determination of dead-load stresses, live-load stresses in trusses, types of trusses, steel arches, suspension bridges, draw bridges, roof trusses, derricks, bridge erection. *Lectures and recitations five hours, first half first term.*

109. *Masonry construction and foundations*: Masonry walls, masonry dams, retaining walls, masonry arches, natural building stones, artifical stone; cements, limes, mortars, plain and reinforced concrete, foundations on land, foundations under water. *Lectures and recitations five hours, second half first term.*

110. *Hydraulics*: For students in civil, mining, and mechanical engineering. Hydrostatics, theoretical hydraulics, instruments, flow through orifices, flow over weirs, flow through tubes, flow through pipes, flow in open channels and conduits, flow of rivers, water supply and water power, water wheels, turbines, pumps and pumping. *Lectures and recitations five hours, second term.*

111. *Sanitary engineering*: Sanitary science, water and its purification, water supply systems, sewerage systems, sewage disposal, disposal of garbage and refuse. *Lectures and recitations five hours, third term.*



1. Power House. 2. Interior of Power House. 3. The Lighting Plant.

113. *Structural design*: In this course the student devotes the required time to the practical design of engineering structures, completing designs for a plate girder railroad bridge, a steel highway bridge, a short span railway truss bridge, a roof truss, a knee braced steel building, and such other designs as the time will permit. This work may be varied to a considerable extent to fit the needs or inclinations of individual students, especially when they choose a structural subject for thesis work. *Five hours, entire session.*

114. *Thesis*: Each candidate for a degree must select and announce the subject of his thesis not later than January 1st, and from that time till May 1st, when it must be completed and handed in, will devote six hours a week to the collection of data and the preparation of his thesis. The thesis may consist of an original design for some engineering work, as a bridge, water supply system, sewerage system, sewage disposal plant, surveys and estimates for a railroad two or three miles long, development of a water power, or a written report showing methods and results of original investigation of some subject connected with engineering.

115. *Course for graduate students*: This course is arranged each year to suit the needs of students who desire to take it, and is open to those who have completed the undergraduate work in civil engineering.

ELECTRICAL ENGINEERING.

PROFESSOR DUNSTAN.

ASSOCIATE PROFESSOR HILL.

ASSISTANT SKINNER.

Courses of instruction offered:

JUNIOR CLASS.

201. *Elementary theory of electricity and magnetism*: A detailed study of the fundamental phenomena and laws of the subject. *Three hours, first term.*

202. *Direct current machinery*: Lectures and recitations on the principles of design, construction, installation, and operation of direct current generators and motors. This course treats in detail of the selection of machinery for given conditions, performance guarantees, acceptance tests for heating, regulation, efficiencies, etc., parallel running, troubles and remedies, and repairs. A large number of carefully selected problems are assigned for solution and every effort is made to have the course cover not only the fundamental principles but also the broader engineering problems connected with the choice and use of this class of machinery. *Three hours, second term.*

203. *Central station appliances and distribution for lighting and power service by direct currents*: This course treats in detail of switch boards and appliances, calculation of circuits of various kinds, arc and incandescent lighting, metering, systems of charging for service, economics of generating plants. *Three hours, third term.*

204. *Elementary theory of electricity and magnetism*: For mechanical engineering students. This course is similar to Course 201 though not so detailed in treatment. *Three hours, entire session.*

205. *Electrical measurements and tests*: For students in electrical engineering and mechanical engineering. The course consists of lectures and recitations upon the measurement of current, voltage, resistance, capacities, magnetic measurements, stray power, brake tests, heat runs, and related subjects. *One hour, entire session.*

206. *Laboratory work*: For students in electrical engineering and mechanical engineering. The course consists of galvanometer work, resistance measurements of various kinds, magnetic measurements and various tests. *Four hours, first term.*

207. *Laboratory work*: For students in electrical engineering and mechanical engineering. This term is devoted to the operation of direct current motors and dynamos, characteristics of direct current machinery, methods of adjusting, compounding, etc. *Four hours, second term.*

208. *Laboratory work*: For students in electrical engineering and mechanical engineering. During the third term, efficiency tests, location of troubles on machine and line, switch boards and appliances, and general experience in the operation of a direct current station, are given. *Four hours, third term.*

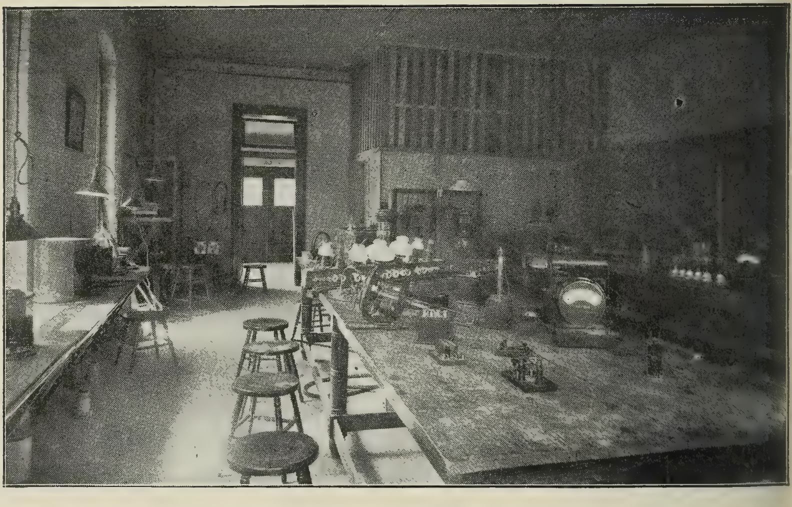
SENIOR CLASS.

210. *Theory of alternating currents*: Lectures, recitations, and problems upon the phenomena of alternating current circuits, inductances, etc. This course is introductory to the subject of alternating current machinery, and in order to take it, students must have a fair working knowledge of differential and integral calculus and vector algebra. *Five hours, first term.*

211. *Alternating current machinery*: Lectures and recitations upon alternating current generators, various methods of calculating alternator regulation, parallel running, transformers, induction motors, single phase commutator motors, synchronous motors, rotaries, etc. The course is somewhat advanced and in order to take it satisfactorily, students must have a good knowledge of the mathematical theory of alternating currents. *Five hours, second term.*

212. *Calculation of transmission lines*: Lectures and recitations upon line inductance and capacity, ohmic and inductive

TELEPHONE LABORATORY.



ELECTRICAL LABORATORY.

drops, voltage regulation, stresses on conductors, tower construction, and related topics. *Five hours, third term.*

213. *Laboratory work*: Operation of alternating current machinery, determination of data for calculation of alternator regulation, direct determination of regulation, efficiency tests, transformer connections, transformer testing for efficiency and regulation, induction motor testing, circle diagram. Brake tests, single phase induction motors, synchronous motors, V-curves, rotaries, synchronizing, etc. The work during the third term consists chiefly in the determination of data for the student's thesis. *Four hours, entire session.*

216. *Telephone engineering*: History and development of telephone types, designs of telephone parts, sub-station equipment, magneto and common battery switch boards, exchange equipment, telephone power plants, over head and under ground circuits, protectors, coin collectors and meters, party lines, private branch exchanges, first and intercommunicating systems, trunking, and toll boards. *Two hours, second term.*

217. *Telephone laboratory*: Details of telephone construction, association of parts, assembly of switchboard parts, storage batteries, tests for location of faults in cables and lines, capacity and insulation tests, details of common battery and magneto switch boards, trunking schemes, etc. *Two hours, first and second terms.*

218. *Electricity and its applications*: For senior class students in mining engineering and optional for senior civil engineering students. The properties and laws of electrical currents, electrolysis, direct current machinery, line calculations, electric haulage, alternating currents, power plants and their equipment. *Two hours, entire session.*

219. *Electrical engineering*: For senior mechanical engineering students. Direct current motors and generators, street railways, circuits, alternating currents, and alternating current machinery. This course is less detailed than the courses for electrical engineering students, but aims to cover the field in a more generalized manner. *Three hours, first term.*

220. *Laboratory work*: For seniors in mechanical engineering. This course is given in connection with course 219, and gives practice in the operation and testing of electrical machinery of various kinds. *Four hours, first term.*

221. *Contracts and specifications*: For seniors in the courses of electrical engineering and mechanical engineering. Lectures and recitations upon engineering specifications and the elements of the laws of contracts. Considerable time is devoted to exercises in writing specifications covering machinery and engineering projects. These specifications are read to the class and the students are required to offer criticism on each set. *Two hours, third term.*

MECHANICAL ENGINEERING.

PROFESSOR WILMORE.

INSTRUCTOR STOKES.

INSTRUCTOR THOMAS.

INSTRUCTOR MITCHELL.

ASSISTANT HIXON.

ASSISTANT SKINNER.

The following courses are offered in this department:

FRESHMAN CLASS.

301. *Shop work—carpentry*: The lessons include instruction in the nature and use of tools; instruction and practice in shop drawing; elementary work with the plane, saw, chisel; the construction of different kinds of joints, timber splices, cross joints, mortise and tenon, mitre and frame work, and dove tail work, comprising the different joints used in cabinet work, and examples of framing roof trusses. Students who have had previous experience in the use of tools or who show special proficiency, are given work of an advanced character. *Six hours, one term.*

302. *Shop work—wood turning*: The instruction includes the nature and use of the lathe and the tools, and the lessons comprise plain, straight turning, caliper work to different diameter and lengths, simple and compound curves, screw plate and chuck work, hollow and spherical turning. *Six hours, one term.*

303. *Shop work—pattern making*: The course includes work in whole and split patterns in wood for solid and cored castings, and core boxes for producing the necessary cores. The characteristics of the different kinds of timber used for patterns are studied, and attention is called to allowances necessary for shrinkage and draft. The patterns are intended to be used by the students in their subsequent work in the foundry. *Six hours, one term.*

SOPHOMORE CLASS.

304. *Shop work—forging*: A text-book is used from which is learned something of the characteristics of the metals and the best methods of working them. The lessons are so arranged as to make the student familiar with the handling of the tools and the successive steps in working metals by hand. Exercises in drawing, upsetting and bending, cutting, punching, and welding by various methods, are given, together with a course in steel forging, including hardening, tempering, and case hardening. *Four hours, first term.*

305. *Shop work—foundry*: Required of all students except

those taking agriculture. The work for the most part consists of small articles, such as light machine parts and the stock pieces used for the exercise work in the machine shop. A sufficient variety is introduced for the student to acquire a good general knowledge of the usual methods and appliances used in light foundry work. Most of the work is in green sand in two part flasks, but some core work and more complicated work is introduced to illustrate the processes, as well as to furnish the castings for the advanced work in the machine shop. Instruction is given in operating the cupola, and from time to time lectures and recitations are held on the metallurgy and working of the metals used in the industrial arts. *Four hours, second and third terms.*

JUNIOR CLASS.

306. *Elementary mechanics*: Required of students in engineering courses. The fundamental laws of mechanical science are studied while special attention is given to the practical applications of these principles to engineering work. *Three hours, second term.*

307. *Strength of materials*: Required of students in the courses of mechanical engineering, electrical engineering, and mining engineering. The general properties and characteristics of cast iron, wrought iron, and steel are studied, and an elementary treatment of the strength of these materials in the forms of beams, girders, columns, and shafts is given. The text-book work is supplemented by lectures and many practical problems are worked out. *Three hours, third term.*

308. *Practical mechanics*: Required of students who take machine shop work. The instruction consists of recitations and lectures on general machine shop work. The construction, use, and limitations of the various machine tools, the forms of cutting tools and methods of grinding them, and the form and use of jigs and gauges, are studied, together with instruction in machine management, and time and cost keeping. *One hour, entire session.*

309. *Shop work*: Required of students in the courses of mechanical engineering and electrical engineering. This work is divided into two parts:

(*a*) A course of chipping and filing. The lessons comprise work on cast iron and wrought iron, and consist in chipping to line on flat and curved surfaces, key seating, filing, and finishing to line, surface filing, slotting, pin and screw filing, and surface finishing with scraper.

(*b*) A course in machine work. The materials worked on include cast iron, wrought iron, steel and brass. Exercises are given in turning to various diameters and lengths, taper turning, facing with chuck and face plate, drilling in the lathe and drill press, reaming, boring screw cutting in lathe and with taps and dies. Practice is given in working the planer, shaper, and milling machine. In the last part of the year, some work in tool making is given, such as making taps, reamers, and milling cutters. Some sort of construction or repair work for the department is always on the shop floor and students who are well advanced in their work have opportunity to gain additional practice and experience by assisting with this. *Six hours, entire session.*

310. *Shop work*: Required of students in the course of mining engineering and elective for juniors in the course of civil engineering. The work includes courses (*a*) and (*b*) as described in course 309 just preceding, except the amount of work required is less in proportion to the time consumed.

All shop work is done from blue prints and blackboard sketches. For the preliminary exercise work, special instruction sheets are prepared and given out to each student with the stock for the exercises. These sheets explain in detail each step in the process of producing the exercise, and are intended to supplement the individual instruction of the instructor. In the construction work it is the purpose to select some simple machine and build two or more of them on the interchangeable system. Jigs and templates are built to accomplish this result as far as possible. A system of time keeping is in force in the shop. At the end of the week each student makes out his time card, describing the work he has done during the week, and giving the number of hours spent on each job. *Four hours, entire session.*

SENIOR CLASS.

311. *Power plant engineering*: Required of students in the courses of mechanical engineering and electrical engineering. The work of the course consists of a study of the practical applications of steam machinery. It is believed that a thorough knowledge of the apparatus in actual practical use is the best preparation a student can have for the study of the theory, and to that end, the different types of engines, boilers, pumps, condensers, and other auxiliary apparatus are taken up and studied in detail, and the advantages of each are discussed. Extensive files of manufacturers' catalogues are kept, and the technical papers and magazines in the library are freely used in order to keep in touch with the latest and best practice in engineering work. *Five hours, first term.*

312. *Thermodynamics*: Required of students in the courses of mechanical engineering and electrical engineering. The subject is first studied from the ideal standpoint, and later the applications are made to hot air engines, gas and gasoline engines, and steam engines, and also to air compressors and refrigerating machines. The temperature-entropy method of analysis is used in explaining heat transfers, and in general, graphical methods are used in preference to analytical ones when they can be made to serve the purpose equally well. In this course will be given instruction in indicator practice and the interpretation and working up of indicator diagrams from steam engines, gas engines, air compressors,

CHEMISTRY.

PROFESSOR ROSS.

PROFESSOR HARE.

ASSOCIATE PROFESSOR RANSOM.

INSTRUCTOR BRAGG.

ASSISTANT THORNTON.

ASSISTANT LIPSCOMB.

Instruction in this department embraces:

101. A course of lectures in general chemistry.
102. A course of lectures in industrial chemistry.
103. A course of lectures in organic chemistry.
104. A course of lectures in metallurgy.
105. A course of lectures in agricultural chemistry.
106. A course of lectures in engineering chemistry.
107. A course of lectures in theoretical chemistry.
108. A course of lectures in physical chemistry.
109. A course on methods of teaching chemistry in secondary schools.
110. Systematic laboratory work in connection with each course of lectures, for the practice of chemical analysis and chemical research.

SOPHOMORE CLASS.

101. *Course in general chemistry:* This consists of a series of lectures including a discussion of the fundamental principles of chemical philosophy in connection with the history, preparation, properties, and compounds of the metallic and non-metallic elements, with the main facts and principles of organic chemistry. In this course the more common applications of chemistry to the arts and manufactures are discussed. The apparatus used for experimental illustration is extensive, containing the newest and approved improvements necessary for presenting the subject in the most attractive and instructive form. *Three hours, entire session.*

REFERENCE BOOKS.

Remsen's College Chemistry, Newth, Holleman, Roscoe and Schorlemmer, Chemical Journals.

JOSEPH WILDER RIDGWAY, B. S.,
Assistant in Animal Industry.

PERCY FREDERICK WILLIAMS, B. S.,
Assistant in Horticulture.

ERNEST WOOD THORNTON, B. S.,
Assistant in Chemistry.

GUY FLEMING LIPSCOMB, B. S.,
Assistant Chemist.

WILLIAM FRANKLIN TURNER, B. S.,
Assistant in Entomology.

*JAMES ALTO YORK, B. S.,
Assistant in Pharmacy.

GEORGE HENRY MARSH, B. S.,
Assistant in Pharmacy.

P. F. BAHNSEN, V. S.,
Lecturer on Physical Diagnosis (Graduate Hanover Veterinary College, Germany.)

DEPARTMENTS

The College of Agricultural Sciences has been organized with the following departments:

Chemistry.
Agriculture.
Botany.
Pharmacy.
Veterinary Science and Physiology.
Horticulture and Forestry.
Entomology.
Animal Industry.

The facilities for instruction together with laboratory equipment in each department are described under the head of "Laboratories and Facilities for Instruction" pages 10 to 22 of this catalogue.

In addition, students in the different departments of the College of Agricultural Sciences receive instruction in other departments as follows:

Mathematics.
Mechanic Arts.
Surveying.
Physics.
Geology and Mining Engineering.
Mechanical Drawing and Machine Design.
Military Science and Tactics.
English.
History and Latin.
Modern Languages.

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*Resigned.

COLLEGE OF AGRICULTURAL SCIENCES

FACULTY

CHARLES COLEMAN THACH, M. A., LL. D., President,
Professor of English and Political Economy.

BENNETT BATTLE ROSS, M. S., Dean,
Professor of General and Agricultural Chemistry and State Chemist.

CHARLES ALLEN CARY, B. S., D. V. M.,
Professor of Physiology and Veterinary Science and State Veterinarian.

JOHN FREDERICK DUGGAR, M. S.,
Professor of Agriculture and Director of Experiment Station.

ROGER SHERMAN MACKINTOSH, B. Agr.,
Professor of Horticulture and Forestry and State Horticulturist.

EMERSON R. MILLER, M. S.,
Professor of Pharmaceutical Chemistry.

WARREN ELMER HINDS, Ph. D.,
Professor of Entomology.

CLIFFORD LEROY HARE, M. S., M. A.,
Professor of Physical and Physiological Chemistry.

DANIEL THOMAS GRAY, A. B., M. S.,
Professor of Animal Industry.

FRANCIS ERNEST LLOYD, A. M.,
Professor of Biology.

ARTHUR McBRIDE RANSOM, M. S., M. A.,
Associate Professor of Analytical and Metallurgical Chemistry.

LUTHER NOBLE DUNCAN, M. S.,
Assistant Professor of Agriculture.

THOMAS BRAGG, M. S.,
Instructor in Chemistry.

*ROLAND ELISHA STONE, M. S.,
Instructor in Botany.

ISAAC SADLER McADORY, B. S., D. V. M.,
Instructor in Veterinary Science.

LLOYD EVERETT CASE, D. V. M.,
Instructor in Veterinary Science.

*Resigned.

611. *Methods of teaching drawing and descriptive geometry*: A course in the methods of teaching drawing and descriptive geometry is given to those who wish to prepare for teaching these branches. This course includes advanced work in shape of problems, supplemented by frequent conferences with the instructor, a complete bibliography of works on the subjects, and an extended course in reading.

Those who desire to avail themselves of an opportunity to practice the teaching of the subjects, may be permitted to attend the meetings of the large classes in elementary work for the purpose of observing methods of teaching.

Those who show sufficient preparation may be allowed to assist in tutoring delinquent students and those who enter conditioned.

Special attention is given to the subject of drawing as taught in high school work.

TEXT-BOOKS.

Thompson's Educational and Industrial Drawing Series, Kenison's Mechanical Drawing, Cross' Mechanical Drawing, Phillips and Millar's Essentials of Descriptive Geometry, Anthony's Machine Drawing, James' Mechanical Drawing, Schwamb and Merrill's Elements of Mechanism, Keown's Notes on Mechanism, Spooner's Machine Design, Smith and Marx's Machine Design, Mack's Notes on Machine Design, Spangler's Graphics.

drawings of simple machines are made from dimensioned sketches, which each student makes for himself from an actual machine or model. Tracings and blue-prints are made from these drawings. All the instruction is intended to familiarize the students with modern drafting room methods. *Four hours, entire session.*

SENIOR CLASS.

607. *Machine design—lectures*: Required in the courses of mechanical engineering and electrical engineering. These lectures are intended to cover the general instructions to the students, such as the selection of materials for different machine parts, the rules for proportion of parts to secure strength, symmetry, and cheapness of manufacture, and the best methods of making, recording and preserving the calculations incidental to the design of a complete machine. Much valuable engineering data of current nature in the form of notes are given as a supplement to the text-book. Illustrated lantern lectures on subjects related to the course, are given at intervals during the year. *One hour, entire session.*

608. *Machine design—drawing*: Required in the course in mechanical engineering. This is a continuation of the junior course in machine design. Original problems involving the design of complete machines to work under specified conditions, are assigned and the student develops the idea in the form of sketches. These are submitted to the instructor for criticism and are afterwards embodied in complete detail and assembly drawings. The calculations of each design are written up neatly and filed with the drawings. Special attention is given to the strength of the parts, to the harmonious and symmetrical appearance of the complete machine, and to the details as regards practical manufacture. *Six hours, entire session.*

609. *Machine design—drawing*: Required in the course in electrical engineering. The work given and the methods pursued are similar to those described in course 608, just preceding, but the amount of work required is reduced in proportion to the amount of time given to the subject. *Three hours, entire session.*

GRADUATE STUDENTS.

610. The work offered during the post-graduate year is an extension of that of the senior year. More of the theory of the the subject is taught, more intricate machines are involved, and problems are given involving the design of a series of machines for manufacturing some specific article. The problems arising in the design of a line of machines of different sizes are also taken up, including the applications of graphical methods and the use of factors of enlargement and reduction. Special attention is given to the effect of current practice on the proportion of machine parts. Suitable text and reference books are used.

603. *Mechanical drawing*: Like course 601, of the freshman class, this course is non-technical and is of a general educational nature. The work is given concurrently with that of course 602, in descriptive geometry, and the applications of the methods of analysis given in descriptive geometry are stressed in each case where they may be applied. The subjects of the drawing plats, which are principally geometric, are required to be completely represented by the student, to enable one to read clearly what is intended to be shown. The work includes orthographic projection, sections, intersections, and developments, machine drawing, and free-hand lettering. As a check on the work in sections, intersections, and developments, and to more fully illustrate the subject, models from drawing paper of the surfaces, are made by the student from the developments. This course is a prerequisite to work in the junior class in civil, electrical, mechanical, and mining engineering. *Three hours, entire session.*

Junior Class.

604. *Kinematics of machinery*: Required in the courses of mechanical engineering and electrical engineering. Under this head machines are analyzed and their elementary combinations of mechanism are studied. The communication of motion by gear wheels, belts, cams, screws, and link work, and the different ways of obtaining definite velocity ratios, and definite changes of velocity in machine parts, parallel motions, and quick return motions, as well as the designing of trains of mechanisms for various purposes, together with the theoretical forms of teeth for gear wheels to transmit motion of these trains, are investigated under this subject. *Three hours, entire session.*

605. *Graphic statics of mechanism*: Required in course of mechanical engineering. The lectures provide a brief course in graphic statics, graphical statics of mechanism, and in the design of structures, including roof trusses for factory buildings, crane frames and girders, and watertank towers. The stresses in machines and structures are investigated by graphical methods, which are carefully checked in the beginning, by analytical proofs. This course includes the solution by graphical methods of such problems, before which analytical methods are comparatively impotent, as those which involve the friction losses in machines, and of the determination of the efficiency of mechanisms. The graphical method is also applied to dynamics by problems in the balancing of engine crankshafts working under specified conditions. The use of manufacturers' handbooks and drafting room practice are given special attention. *One hour. entire session.*

606. *Machine design*: Required in the courses of electrical engineering and mechanical engineering. Instruction is given in the design of fastenings and machine parts, and in the general methods of arranging views. This course includes the design of cams, gear tooth outlines, quick return motions, and link work combinations, which supplements course 604, in kinematics. Scale

men of two year's experience in an architect's office will also be admitted as special students provided their general education is satisfactory.

MECHANICAL DRAWING AND MACHINE DESIGN.

PROFESSOR FULLAN.

ASSISTANT GAUM.

ASSISTANT SOMERVILLE.

The following courses are offered in this department:

Freshman Class.

601. *Mechanical drawing*: This course is not of a technical nature, is intended to be of general educational value to the student, and is required of students in all courses. The object of the course is to provide the student with the applications of geometry to drawing, and to train the hand and eye, with the mind. The work is principally that of linear drawing, including the most useful of the geometric constructions, arranged in progressive order. Free-hand lettering is given early in the course by means of lectures ,and practice work in it is continued throughout the year. The one plane projections—axonometric and oblique—which enable the student to represent an object on a single plane, are illustrated by means of suitable models, from which the students make their drawings. In this course accuracy, neatness, and the use and care of the instruments are given special attention. *Three hours, entire session.*

Sophomore Class.

602. *Descriptive geometry*: Required of all students preparing for engineering and architectural courses. The work is given by lectures, written recitations, and drafting room instruction. In this course, theory and practice are combined with the purpose of training the student in the graphical expression of ideas. The instruction includes problems relating to the point, straight line, and plane; to tangents and normals; to cylindrical, conical, and warped surfaces; to sections, intersections, and developments; to shades, shadows, and perspective, and is intended to develop in the mind of the student a clear concept of magnitudes in space. The lectures and written recitations are to impart principles and to permit the instructor to meet the entire class, and, with diagrams and models, supplement the work of the text. The drawing, two hours per week, consists of plates of problems, which are selected from the text-book and other sources. *Four hours, entire session.*

take up a major part of the last year's work. In addition to the lecture and text-book recitations, practical examples are demonstrated and problems worked out over the drawing board. Working drawings and details of completed buildings are carefully studied, and scale drawings made by the student on tracing cloth and blue-printed. The student is instructed in the use of the various steel manufacturers' hand books and other pocket books.

Every other week a day is given to the solution of problems in constructive design, graphical analysis, etc., to illustrate the principles considered. Specifications are discussed and the different materials of construction, their manufacture and uses by the trades are described.

The course in specifications and building materials alternates with French. Juniors and seniors take these courses together every alternate year.

The following synopsis indicates the subjects considered in detail: In construction, foundations, masonry walls and footings, stability and supporting forces, etc. Dimensions and properties of structural shapes, tension, shearing, riveted joints, strength of posts, struts, and columns in wood, cast iron, and steel, strength of beams, stiffness and deflection, built up sections, fireproofing of buildings, reinforced concrete, roof trusses in wood and steel, graphical analysis of same and detail of joints, estimating. *Three hours, entire session.*

508. *Specifications and building materials*: This course includes architectural practice comprising the preparation of working drawings, specifications and superintendence. Legal relations of architect, owner, and contractor, contracts, settlement of disputes, responsibility and supervision of architect, payments, etc. Specific clauses and specification of labor, materials, workmanship, and construction. Mason's work, foundations, shoring and underpinning, limes, cements and mortars, building stones, brickwork, terra cotta, materials of fireproofing, lathing and plastering. Carpenter's work, building and finishing woods, framing, windows and doors, outside finish, standing finish, floors, stairs, heavy framing and slow burning construction, plumbing, heating and ventilating, builder's hardware and patented devices.

SPECIAL STUDENTS.

Applicants for admission as special students in architecture must show by certificate from a recognized college or by examination in mathematics, English, and history that their preparation is equal to that given in those subjects during the freshman and sophomore years in this institution. They will also be required to take descriptive geometry in addition to their course in architecture. Draughtschitecture, mythology, and racial characteristics. Origin of the orders, vases, sculpture, polychromy, optical refinements. The Acropolis at Athens, and the Parthenon. Early history of Italy and the Etruscans. The Romans,—types of buildings and construction and comparison of Greek and Roman art. Early Christian and Byzantine art. Saracenic architecture and ornament. The Romanesque and Gothic styles. The Renaissance in Italy, Florence, Venice, and Rome. France, England, Germany, and Spain. Modern architecture on the continent and in the new world, and the various revivals. Colonial architecture in the United States.

These are subsequently discussed and criticised. Such personal investigations are continued into the senior year, and the student generally becomes familiar with standard books and acquires a working knowledge of historic forms. One hour each week is devoted to the closely related subject of ornament and numerous tracings and color sketches are required from the best examples of every period. *Three hours, entire session.*

504. *Drawing and design*: The study of design is pursued by means of assigned problems and individual and class criticism. The first term is devoted mainly to a study of the orders on a large and small scale by means of carefully composed frontispieces, and during the spring, problems are assigned which will enable the student to employ the orders in a monumental and scholarly manner. A consistent and faithful adherence to historic precedent is insisted upon. *Ten hours, entire session.*

505. *Architectural graphics*: This course embraces the theory of projections, intersections, and shades and shadows; perspective by the office method and isometric constructions to simplify complex perspective details; selected problems in stereotomy and stone jointing. It furnishes the basis for architectural drawing, and an equivalent of the course in descriptive geometry given in the sophomore year (Engineering 602) is an essential pre-requisite. *Four hours, entire session.*

SENIOR CLASS.

506. *Drawing and design*: The course is conducted by means of sketch problems occupying eight hours, testing the student's originality and use of the classified knowledge at his command; by written programs for typical buildings and group plans in the presentation of which a month or more would be allowed; by a thesis design occupying two months of careful work, with a written memoir accompanying the same. A lecture is given once a week on composition and the theory of architecture. Freehand drawing is given throughout the two years, practice being had in pencil, pen, pen and ink, charcoal from the cast, and water color. *Sixteen hours, entire session.*

507. *Construction and office practice*: The courses in architectural engineering and specification of building materials

sculpture and architectural detail; a large number of architects' working drawings and signed plates, and several hundred examples of free-hand drawings of various sorts. A library of standard books and portfolios of plates, illustrating details of decoration and composition, 250 lantern slides and numerous photographs of notable monuments of architecture. Manufacturers' samples and catalogues and general current journals devoted to architecture and the allied arts.

The following courses are offered:

Sophomore Class.

501. *Elements of architecture and drawing*: For sophomores who expect to elect the course in architecture. Thorough training is given in the fundamental principles of the architectural system of drawing. This includes free hand and mechanical in the various mediums, and a careful study of lettering. The orders rendered in the form of simple compositions and frontispieces furnish the basis of the year's work. An effort is made to cultivate the student's sense of proportion by insisting on an accurate knowledge of all the details of the classic orders as classified in Ware's American Vignola. *Three hours. entire session.*

Junior Class.

502. *Theory of architecture*: Lectures and criticisms over the drawing board. General theory of artistic composition in the various styles applied to architecture and ornament. The course includes an extended study of the elements of design such as vaults, arches, arcades, columns, wall treatment, stairways, etc.; principles of rendering in color, pen and ink, and pencil, planning and composition of facades and a critical survey of the monuments of architecture in all periods. *One hour, entire session.*

503. *History and ornament*: The recitation periods are occupied by lectures on the historic styles and monuments of architecture and their applications to modern design, supplemented by the exhibition of lantern slides, and reference to photographs and books. The student is required to consult selected articles in the library and to prepare independently several essays during each term on specified subjects, illustrated by sketches and tracings.

The course includes lectures on prehistoric architecture, general topography, history and religion of Egypt, pyramids, tombs, and temples. Architecture and ornament of the Assyrians, Chaldeans, Persians, Phoenicians, and Jews. Prehistoric Greek ar-

ARCHITECTURE.

PROFESSOR CURTIS.

ASSISTANT STOUT.

The trustees of the Alabama Polytechnic Institute established in June, 1907, a department of architecture, to comply with an increasing demand for instruction in this subject, and to encourage students to take up a profession which hitherto could be pursued only after an expensive term of study in the North.

The course as planned leading to the degree of B. S. in Architecture covers a period of four years' study, of which the first two are devoted chiefly to intentional preparation in technical and cultural subjects leading up to the special instruction in architecture beginning in the junior year. The curriculum planned for the junior and senior years recognizes that architecture must be treated as an art as well as a science, and as drawing and design are the most essential things in an architect's professional work, the greatest possible amount of time is devoted to them. As arranged the afternoons of the week are devoted entirely to drawing, and the mornings to lectures on the technical studies. The work of the architect on account of its many aspects requires not only a thorough knowledge of design and building processes, but a wide sympathy with all intellectual culture, and the student is encouraged throughout his course to improve his mind by reading literature, history, and science. The importance of descriptive geometry and its applications is emphasized by a very thorough course in the sophomore year, and this is continued during the fall term of the junior year in its special applications to architectural design and rendering.

EQUIPMENT.

The department is located in three well lighted rooms in the main building of the college. A floor-space of 2,250 sq. ft. is occupied by a lecture room 25x30, a large draughting room 30x35, and a library, office, and filing room 15x30. These rooms are well furnished with substantial drawing tables for general and freehand drawing and extra equipment. A collection of selected plaster casts of classic-

and uses of coal, petroleum, limestones, salines, gypsums, fertilizers, abrasives, minor non-metallic minerals, and mineral waters. *Two hours, first term.*

Text-book: Riess' Economic Geology of the United States. (Revised.)

409. *Economic geology, metallic minerals*: For students who have taken course 408. The work includes a study of the ores of iron, copper, lead, zinc, gold, silver, silver-lead, aluminum, manganese, mercury, and the minor metals. *Two hours, third term.*

Text-book: Riess' Economic Geology of the United States. (Revised.)

410. *Mining*: Modes of occurrence and origin of the various ores and economically valuable mineral deposits. Prospecting and examination of mineral properties, including boring by different methods. Methods of opening up mineral deposits, breaking ground, supporting excavations, developing and working coal and metalliferous deposits, haulage, hoisting, drainage, ventilation, lighting, and provisions for ascent and descent. The last term is devoted to the economics of mining. This subject covers mining methods, finance, ore reserves, valuation of mining property, and other subjects relating to the practical operation of mines. *Three hours, entire session.*

411. *Drafting*: Drawings of mining and metallurgical machines are made from actual measurements taken. Also original work in connection with thesis. *Four hours, entire session.*

412. *Laboratory course*: For students in mining engineering and chemistry and metallurgy. The work includes crushing, sampling, concentration, stampmilling, amalgamation, and cyaniding. *Three hours, entire session.*

Text-books: Coal and Metal Miner's Pocket Book, and International Text-Books.

413. *Methods of teaching physical geography*: Especially adapted to the secondary schools of the state. In the course in general geology will be found much that is especially applicable to physical geography. It takes up a study of subterranean and surface agencies both as to their destructive and constructive processes. The results of these processes are then taken up in a study of the topography of the surface of the earth under the following heads: The geographic cycle; land sculpture; topography as determined by faults and joints; adjustment of rivers; sea-coasts; mountain ranges. *Two hours a week, first and second terms.*

GRADUATE STUDENTS.

414. *Graduate course*: This course is offered to those who desire to pursue the subjects related to mining beyond the scope to which the two years' course limits them. The work will be arranged to meet the requirements of those desiring to take it.

minerals. A good type collection of minerals is kept in the laboratory for comparison. An effort is made to have the student become familiar with economically important ores and non-metallic minerals and the common rock forming minerals so that he can identify them at sight by the application of a few simple tests. *Four hours, two and a half terms.*

Text-books: Moses and Parsons' Mineralogy, Crosby's Tables, and Butler's Handbook of Minerals.

403. *General geology*: For students in the courses of mining engineering, and chemistry and metallurgy, and optional to seniors in the courses of civil engineering, general course, and agriculture. The course covers dynamic geology, structural geology, geomorphology, and historical geology in the order named. The lectures and recitations are supplemented by laboratory instruction and geological excursions. *Two hours, entire session.*

Text-book: Scott's Introduction to Geology (1907 revised edition).

404. *Mine surveying*: All general surveying as given by the civil engineering department previous to the second term of the junior year is required for this course. The work covers general surveying methods as applied to conditions prevailing at mining properties, both underground and at the surface. The student is required to work out practical problems that he will be likely to meet in actual practice. *Five hours, first half of second term.*

Text-books: Johnson's Surveying, Henck's Field Book, Coal and Metal Miner's Pocket Book, International Text-Books.

405. *Coal mining*: For those who have taken course 404 and its prerequisites. This course includes methods of coal mining, examination of coal properties, coal cutting machinery, timbering, track ventilation, coal washing, and coking. *Five hours, second half of second term, and third term.*

Text-books: Coal and Metal Miner's Pocket Book, and International Text-Books.

406. *Drafting*: The course includes free hand lettering, mapping, and detailed drawings to scale of various structures relating to mining. *Four hours. entire session.*

407. *Summer course*: The time will be divided between a study of gold mining and milling at Alexander City; coal mining, washing, and coking at Birmingham, and iron ore mining at Birmingham. Surveys and reports will be required. *Four weeks immediately following commencement between the junior and senior years.*

SENIOR CLASS.

408. *Economic geology, non-metallic minerals*: For students in the courses in mining engineering, and chemistry and metal lurgy. The course is presented by lectures and recitations and includes the study of modes of occurrence, distribution, origin

SPECIAL STUDENTS.

Special students who have the necessary preparation may be admitted to any of the classes in this department. For the benefit of students who, for any reason, are not able to remain in college to complete the full course, but who wish some training in drawing and shop practice, a special two-year course has been arranged. This course is particularly recommended to the young men who contemplate entering the mechanical trades, either preceding or following the apprenticeship period. In many cases this work has been accepted as equivalent to a part of the apprenticeship period and the time of the latter shortened thereby. The drawing and mathematics are invaluable tools in any of the trades, and work in the different shops enables the apprentice to become familiar with the principles of the trades allied to his own.

For teachers who desire to secure preparation in the subjects pertaining to manual training, special shop courses are arranged. These will include such of the regular courses as are adapted to the requirements of the class, and suitable supplementary courses in wood and metal work. Lectures on the arrangement of courses and the equipment of shops for instruction in manual training are offered.

MINING ENGINEERING AND GEOLOGY.

PROFESSOR BROWN.

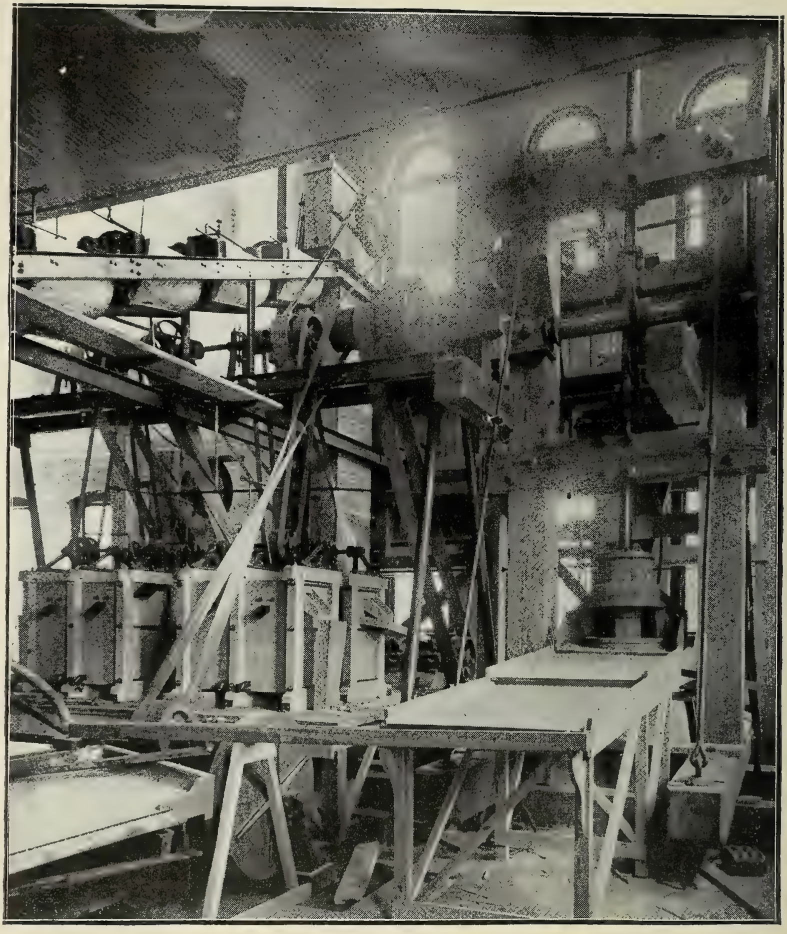
ASSISTANT HOWARD.

JUNIOR CLASS.

401. *Crystallography*: For students in the courses in civil engineering, mining engineering, and chemistry and metallurgy. A thorough study is made of the crystal systems, aided by a full set of crystal models and original crystals. *Four hours, first half of first term.*

Text book: Moses and Parsons' Mineralogy.

402. *Mineralogy*: For students in the courses of civil engineering, mining engineering, and chemistry and metallurgy. Half of the time is devoted to blow-piping and the determination of a large number of unknown minerals. The second half of the course is given to a study of the physical characteristics of the



MINING ENGINEERING.

Ore Dressing Laboratory.

319. *Laboratory*: Required of students in mechanical engineering and civil engineering and optional in electrical engineering. The course includes work in testing the strength of materials, as iron, steel, wood, and cement in tension, compression, and transverse loading, and the calibration of weirs, nozzles and meters, a study of the flow of water in pipes, and the testing of hydraulic motors and pumps. *Four hours, second term.*

320. *Laboratory*: Required of students in mechanical engineering and electrical engineering. The work includes tests of engines, boilers, pumps, gas and gasoline engines, complete power plants, and when opportunity offers, tests of commercial power plants. *Four hours, third term.*

GRADUATE STUDENTS.

321. *Laboratory*: This work is arranged to suit the work being carried by the students, and the hours are adjusted to suit their available time.

322. *Steam turbines*: The theory, design and structural details of the different types of modern steam turbines are studied, and complete designs are worked out. *Three hours, first term.*

323. *Reinforced concrete construction*: A study is made of the principles involved in reinforced concrete construction as applied to buildings in general, and particularly to buildings for power houses, shops, manufacturing buildings, and large bins for storing coal. *Three hours, second term.*

324. *Power plant design and economics*: The economics of power plant design, the relation of the different elements of a power plant to each other, and the conditions of maximum efficiency, are studied. Plants are designed to give highest efficiency under specified conditions, and actual plants are studied to discover, if possible, sources of additional economy in operation. *Three hours, third term.*

325. *Thesis*: Every applicant for a degree is required to prepare a thesis and hand it in not later than May 1st, preceding the commencement at which he expects to graduate. This thesis may consist of a design, a study of some engineering problem involving a series of tests, or a study involving the collection and analysis of data and material on some engineering subject, with a statement of definite conclusions derived therefrom.

326. *Manual training for teachers*: Courses in elementary wood work and iron work are offered. These courses will be adapted as far as possible to the individual needs of those taking the courses, and in addition to the shop work will include lectures and conferences on the organization of courses and the equipment of shops for manual training. *Hours to be arranged.*

and refrigerating machines. *Five hours, second and third terms.*

313. *Heating and ventilating*: The different methods of heating and ventilating buildings are treated. A study is made of the relative efficiency of hot water, steam, and warm air as mediums for heating different kinds of buildings, and special attention is given to the design and operation of healthful heating systems for residences. *Two hours, first term.*

314. *Gas engines*: This is a descriptive course, and gives attention to the construction and operation of gas engines and gas producers as used in modern power plants. The rapid development of the gas engine in recent years warrants a more extended treatment of this subject than can be given in the usual course of thermodynamics, and the above is offered as supplementary thereto. The subject will be presented by text-book, lectures, manufacturers' catalogues and drawings, and student reports on current articles of interest. *Two hours, second term.*

315. *Mechanics of materials*: The properties and characteristics of the materials of engineering construction are studied, and the development of the methods of calculating their strength under different conditions of stress is explained. Many problems involving the strength of beams, girders, columns, and shafts are worked out. *Three hours, first term.*

316. *Materials of machines*: Attention is given to the methods of manufacture and the uses of the materials which are employed in engineering construction. Special attention is given to the latest methods of manufacture of iron, steel, and cement, the work being presented by text-book, lecture, lantern slides, and manufacturers' catalogues. *Three hours, third term.*

LABORATORIES.

Junior Class.

317. *Laboratory*: Required of juniors in the courses of mechanical engineering and electrical engineering. The work will consist in the adjustment and calibration of instruments used in engineering work, and the adjustment and operation of gas, gasoline, and steam engines. Tests will be made to determine the efficiency of mechanisms such as hoists, jack screws, gearing, belts, and other transmission devices, together with some work in valve setting and power measurement of steam engine. Complete and accurate written reports of each experiment are required. *Twenty hours per week for two weeks, beginning the week following commencement.*

Senior Class.

318. *Laboratory*: Required of students in mechanical engineering and electrical engineering. This work includes fuel analysis and heat determination, flue gas analysis and study of combustion, oil and lubricant testing, and valve setting and indicator card analysis. *Four hours, first term.*

INTERIOR CHEMICAL LABORATORY

JUNIOR CLASS.

102. *Industrial chemistry*:

Lectures, including discussion in detail of the process and chemical principles involved in the most important applications of chemistry in the arts and manufactures to the preparation of materials for food and drink, for clothing, shelter, illumination, cleansing, purifying, writing, printing, etc.

These lectures are amply illustrated by means of suitable specimens of raw materials and manufactured products, together with models and diagrams. *Four hours, entire session.*

103. (*a*) *Courses in organic chemistry*: Instruction in this subject embraces lectures and recitations upon the leading facts and principles of the chemistry of the carbon compounds, and includes a study of the methods of preparation of the more important compounds, their properties, and their structural and stereochemical relations. *Two hours, entire session.*

(*b*) A special short course offered to students in the agricultural courses. *Two hours, first term.*

TEXT AND REFERENCE BOOKS.

Remsen's Organic Chemistry, Richter's Organic Chemistry, Gatterman's Practical Methods of Organic Chemistry.

SENIOR CLASS.

104. *Course in metallurgy*: This consists of lectures and recitations upon the more important metals, such as iron and steel, copper, lead, tin, silver, gold, mercury, zinc, etc. It includes a discussion of the physical and chemical properties of the metals and their alloys, the ores and their treatment, and the processes by which the metals are obtained from the ores, with chemical reactions involved. *Two hours, entire session.*

105. *Course in agricultural chemistry*: This consists of lectures on chemistry in its application to agriculture, and includes a thorough discussion of the origin, composition, and classification of soils, the composition and growth of plants, the sources of plant food and how obtained, the improvement of soils, the manufacture and use of fertilizers, the chemical principles involved in the rotation of crops, the feeding of live stock, and the various operations carried on by the intelligent and successful agriculturist. *Three hours, second and third terms.*

REFERENCE BOOKS.

Snyder's Soils and Fertilizers, Snyder's Chemistry of Plant and Animal Life, Johnson's How Crops Grow, and How Crops Feed, Lupton's Elementary Principles of Scientific Agriculture, Johnson and Cameron's Elements of Agricultural Chemistry, Storer's Agriculture in Relation to Chemistry, scientific journals, reports of the United States Department of Agriculture, and the bulletins and reports of the various home and foreign agricultural departments and stations.

106. Engineering chemistry: A course of lectures given during the senior year, especial attention being devoted to the study of the construction and equipment of the chemical plants devoted to the manufacture of the more important chemical products. The study of textile chemistry will also be included in this series of lectures. *One hour, entire session.*

Excursions to various chemical and metallurgical plants during the course of the year will aid in familiarizing the student with the practical details of the operation of the leading industries.

REFERENCE BOOKS.

Thorp's Industrial Chemistry, Wagner's Chemical Technology; Muspratt's Chemistry as applied to Arts and Manufacturing, Ure's Dictionary, Watt's Dictionary, Sadtler's Industrial Organic Chemistry, Blount and Bloxam's Chemistry for Engineers and Manufacturers.

107. *Course in theoretical chemistry*: The more modern phases of chemical theory are given especial attention. *Two hours, entire year.*

108. *Course in physical chemistry*: Lectures and recitations. *Two hours, entire year.*

109. *Methods of teaching chemistry in the secondary schools*: In this course, students who have had the necessary preliminary work in chemistry will be afforded the opportunity of taking laboratory practice in experimental chemistry for lecture purposes and for the purpose of the practical study of methods of handling classes in experimental laboratory work. Advanced students can also take the course in the history of chemistry which is provided in the senior year of the course in chemistry and metallurgy. *Hours to be arranged.*

LABORATORIES.

110. *Course of systematic laboratory work*: Courses of practical work in the laboratory are carried on in connection with all courses of lectures.

SOPHOMORE CLASS.

(a) All students are required to take practical laboratory work, instruction being given in the simplest methods of chemical manipulation. A portion of this time may be devoted to lectures and classwork in general chemistry. *Two hours, entire session.*

The laboratories, which are open from 9 A. M. to 5 P. M., during six days in the week, are amply supplied with everything necessary for instruction in chemical manipulation in qualitative and quantitative analysis, and in the methods of prosecuting chemical research. Unusual facilities are offered to students who wish to devote their time to the special study of practical chemistry.

Each student on entering the chemical laboratory is furnished with a work table, a set of re-agent bottles and the common reagents and apparatus used in qualitative and quantitative analysis.

At the close of the session he will be credited with such articles as may be returned in good order; the value of those which have been injured or destroyed will be deducted from his contingent fee.

JUNIOR CLASS.

(*b*) The work of this course embraces the practical operations of chemical synthesis and analysis, and includes the preparation of non-metallic elements and their most important compounds, in addition to a systematic study of the metals and their compounds, their separation and identification.

SENIOR CLASS.

(*c*) A course in quantitative analysis, including analysis of fertilizers, soils, coals, ores, iron and steel, sugars and sugar products, feed stuffs, mineral waters, fluxes, slags, cinders, furnace gases, etc. The nature of the work is varied somewhat to suit the individual object of the student.

(*d*) The laboratory course provided for students in the course in mining engineering includes work in qualitative analysis during the first term. During the second and third terms, students take work in quantitative analysis, including assaying. In this latter portion of the course, especial attention is given to metallurgical analysis and the fire assay of ores of gold, silver, and other important metals. *Eight hours, entire session.*

(e) In the course of pharmacy instruction in toxicology and toxical analysis is given during the last term.

111. In addition to the laboratory work above described it is designed to give a short course of laboratory work in industrial chemistry, in which the student will apply upon a small scale the principles involved in the processes of some of the more important chemical industries.

Advanced students are afforded ample facilities for work in organic preparations and organic analysis.

TEXT-BOOKS.

In qualitative analysis—Jones Sellers, Fresenius, Plattner.

In quantitative analysis—Fresenius, Cairns, Sutton, Rose, Blair's Analysis of Iron and Steel, Rickett's Notes on Assaying, Mitchell's Manual of Practical Assaying, Stillman's Engineering Chemistry, Lord's Metallurgical Analysis.

In agricultural chemical analysis—Official methods of the Association of Agricultural Chemists, Wiley's Principles and Practice of Agricultural Analysis.

CHEMICAL LABORATORY.

(For description of building see page 22.)

The chemical apparatus recently purchased for the laboratory consists of a full supply of the most approved instruments for practical work and investigation. The building is supplied with water and gas and every appliance required to meet the demands of modern scientific instruction and research. In addition to the apparatus usually supplied to first-class laboratories, there have been imported a new and improved Schmidt and Hensch's polariscope, ten short-arm balances of latest pattern, Bunsen's spectroscope, Abbe refractometer, and other instruments for delicate and accurate work.

AGRICULTURE.

PROFESSOR DUGGAR.

ASSISTANT PROFESSOR DUNCAN.

The regular agricultural course extends through four years and is intended to prepare those who complete it to become successful farmers, farm superintendents, and agricultural scientists in the various divisions of agricultural work in the U. S. Department of Agriculture and the numerous agricultural colleges and experiment stations. The studies in the regular agricultural course are so arranged that a student may obtain a thorough education while acquiring the technical training necessary to the most successful management of farming operations and of agricultural investigation or teaching. No foreign language is required for graduation in this course, but those who expect to engage in the scientific work of the U. S. Department of Agriculture or of the agricultural colleges and experiment stations, have the opportunity to study Latin, French, and German, or any one or two of these.

For the benefit of those who are unable to spend four years at college and who desire to prepare for the management of a farm, a short or two-year course in agriculture is provided. In this the student devotes his entire time to those studies having a direct bearing on his future occupation.

The following courses of instruction are offered:

Freshman Class.

201. *Introduction to agriculture*: This is a short course of lec-

COMER AGRICULTURAL HALL.
(In Course of Construction.)

tures, dealing with some of the simplest phases of agriculture. *Two hours, third term.*

SOPHOMORE CLASS.

202. *Principles of agriculture*: Lectures, recitations, and laboratory practice dealing with the soil and the conditions necessary to the growth of crop plants. Methods of preparing and cultivating the soil are considered. *Four hours, second term.*

203. *The small grains*: Lectures, recitations, and field practice on wheat, oats, rye, and barley. These plants are treated both as grain crops and as forage plants. *Two hours lectures, two hours laboratory, third term.*

JUNIOR CLASS.

204. *Corn*: Lectures, recitations, and field practice on the cultivation, judging, and improvement of corn. The student assists in harvesting certain experiments, becomes acquainted with a number of the best varieties, learns to select the best ears and the best plants, and notes the results of experiments in improving or breeding corn. *Two hours lectures, two hours laboratory, first term.*

205. *Leguminous forage plants and soil improvement*: Lectures, recitations, and field practice on this most important group of forage plants, including cowpeas, soy-beans, alfalfa, the clovers, vetches, etc. These plants are treated both with reference to their use as forage plants and as means of improving the soil. *Two hours lectures, two hours laboratory, third term.*

SENIOR CLASS.

206. *Cotton*: Lectures, recitations, and field practice in identifying and comparing a large number of varieties growing on the experiment station farm; judging individual cotton plants, and lectures on the cultivation, fertilization, and improvement of cotton. The collection of varieties growing on the experiment station farm usually numbers between fifty and one hundred varieties, and all of these are available for students' use. *Two hours lectures, two hours laboratory, first term.*

207. *Cotton classing and machinery*: This course of laboratory work consists during the first part of the term of practice in classing the commercial grades of cotton by comparing great numbers of samples procured from the offices of cotton buyers with a nearly complete set of type samples owned by this department. A part of this practice will be under the supervision of exeprienced cotton buyers. During the latter part of the term students are given practice in the handling and sharpening of gins and special work with other machinery used in connection with the cotton crop. *Two hours lectures, two hours laboratory, second term.*

208. *Farm management*: A course of lectures and practice

dealing largely with rotation of crops, cost of producing different crops, systems of farming, selection of a farm, and plans for the best use of the farm or soil in which each student is most interested. This course is intended to give the student an opportunity to bring to bear on practical problems the information acquired from preceding courses of instruction in agriculture and related subjects. *Two hours lectures, two hours laboratory, third term.*

209. *Investigation as a basis for a thesis*: After a month spent in special reading under the direction of the professor of agriculture with a view to the selection of a subject for a thesis, the student will perform some agricultural experiment in crop production, soil treatment, or in testing farm machinery. Suitable facilities for such thesis work are provided in the fields and agricultural laboratories. In addition to conducting an original experiment the student will review the literature of agriculture to ascertain the results of similar or related experiments. It is expected that the results of some of these experiments will be worthy of publication. *Entire session.*

210. *Farm machinery*: Recitations, practice in setting up and operating various kinds of farm machinery, including mowers, grain drills, self binders, etc. *Two hours lectures, two hours laboratory, first term.*

211. *Soil physics*: Recitations intended to acquaint the student with the physical properties of soils, with the principal soils of Alabama, and especially those of the region from which each student comes. Instruction in this course will be given with a view to fitting a student to engage in the soil survey work of the U. S. Department of Agriculture, as well as to prepare him for the rational management of the soil of the farm. *Two hours lectures, two hours laboratory, second and third terms.*

212. *Special crops*: A course of lectures dealing with sugar cane, tobacco, rice, broom-corn, and other southern crops not treated in other courses. *Two hours, second term.*

213. *Methods of teaching agriculture*: This is a course of lectures and laboratory and field exercises intended to meet the needs of those who expect to teach agriculture or nature study in the common schools and agriculture in the high schools. Special attention is given to the selection of material for illustrating the principles of agriculture, and practice will be given in conducting a number of simple demonstrations. Frequent excursions are mad to the fields. *Two hours, third term.*

Postgraduate courses in crop production, agricultural experimentation and teaching, and farm management are offered. The exact nature of the subject will depend upon the special requirements of the student.

Students taking a four-year course in agriculture receive instruction in the various branches of animal industry and

INTERIOR BOTANICAL LABORATORY

horticulture, as well as in the natural sciences bearing on agriculture.

BOTANY.

PROFESSOR LLOYD.

INSTRUCTOR ————————

SOPHOMORE CLASS.

301. *Elementary botany*: General morphology and physiology of the higher plants, and a brief review of the plant kingdom, for the purpose of giving a fair idea of the more important groups of plants, and the scope of botanical study. Prerequisite for all other courses in botany. *Lectures and recitations, three hours, laboratory four hours, third term.*

JUNIOR CLASS.

302. *Comparative morphology and physiology*: The structure of plants from the physiological point of view. This course is designed especially to meet the requirements of students in agriculture and for those who are preparing to enter teaching. *Lectures two hours, laboratory four hours, entire session.*

303. *Plant anatomy*: A comparative study of the minute structure of plants, with practice in the identification of the more important drugs. Especially for students in pharmacy. Simple microtechnic. *Lectures one hour, laboratory four hours, entire session.*

304. *Economic botany*: General taxonomy of the plant kingdom, and special taxonomy of the spermatophytes, giving attention especially to the useful and noxious qualities of plants, poisonous, medical, and industrial. Especially for students in veterinary medicine; open to students in agriculture. *Two hours, entire year.*

SENIOR CLASS.

305. *General physiology*: The physiology of the plant cell and the elements of cytology. Especially for students in agriculture. *Lectures two hours, laboratory four hours, first term.*

306. *Plant pathology*: The more important diseases, especially of economic plants, and the methods of prevention. *Lectures two hours, laboratory four hours, second term.*

307. *Phytogenesis*: Variation and inheritance; the amelioration of cultivated plants. *Lectures two hours, laboratory four hours, third term.*

(NOTE.—Courses 305, 306, and 307 are to be regarded as interrelated and as constituting the continuous work of the senior year for students in agriculture.)

308. *Corparative morphology*: Types of the plant kingdom studied comparatively. Designed especially for those preparing

to teach. *Four hours, one of which will be used for lectures, entire session.*

309. *Methods of teaching biology*: The history of teaching biology, especially in America, and a study of the prevalent methods of presenting the subjects of botany and zoology more particularly in the secondary school. The course of botany for agricultural schools. Opportunity will be allowed for practical work in the laboratory. Open to other than seniors, if qualified. Designed for those preparing to teach. *One hour, entire session.*

(NOTE.—In connection with course 309, optional work in zoology will be offered. This must be arranged for under proper conditions.)

310. *Graduate courses*: Will be arranged to suit the needs of students who are prepared for them.

Seminars: Students will meet the professor occasionally in the seminar room for discussions and reviews of literature.

THESIS WORK.

Students who expect to undertake research or thesis work in this department during their senior year should consult in advance as to the subject so that material may be provided for their work. Students in the general course who wish to take their elective laboratory work in botany should if possible consult about it before the end of their sophomore year.

PHARMACEUTICAL CHEMISTRY, PHARMACY, PHARMACOGNOSY, AND PRESCRIPTION WORK.

PROFESSOR MILLER.

ASSISTANT YORK.

ASSISTANT MARSH.

JUNIOR CLASS.

401. (*a*) *Pharmacy*: The different systems of weights and measures. Specific gravity. Pharmaceutical problems. The fundamental operations in pharmacy. Apparatus used in pharmaceutical processes. Discussion of all classes of pharmaceutical preparations. *Class work, three hours, entire session.*

(*b*) *Laboratory*: Preparation of official and non-official galenicals. *Six hours, entire session.*

402. *Pharmacognosy*: All official vegetable drugs studied with aid of simple and compound microscope. *Class work with laboratory work, four hours, entire session.*

SENIOR CLASS.

403. (*a*) *Pharmacy*: Official and non-official pharmaceutical

INTERIOR PHARMACEUTICAL LABORATORY

chemicals, inorganic and organic, including the more important newer remedies. *Class work, five hours, entire session.*

(*b*) *Laboratory*: Preparation of official and non-official pharmaceuticals, inorganic and organic chemicals. Pharmaceutical testing by pharmacopœial methods. Drug assaying. Practical exercises in identification of pharmaceutical preparations and chemicals. *Fifteen hours, entire session.*

404. *Art of dispensing*: The prescription. The study of several hundred original prescriptions from drug-store files. Incompatibilities. Doses. *Four hours, entire session.*

The practical work in pharmacy includes the manufacture of not less than two hundred pharmaceutical preparations and the compounding of not less than fifty prescriptions.

The work in pharmacognosy includes the study of more than 200 drugs, each of which the student is required to recognize by its physical and chemical properties, giving Latin name, common name, origin, habitat, constituents, medicinal action, and dose.

405. The work of the third year in the special course in pharmacy may be elected from the following courses:

(*a*) An advanced course in the manufacture of galenicals and organic and inorganic chemicals used in medicine.

(*b*) A course in the testing of drugs and medicinal chemicals for impurities by pharmacopœial methods.

(*c*) A course in pharmaceutical assaying, including the assay of alkaloidal drugs, glucosidal drugs, resinous drugs, the valuation of fixed and volatile oils, pepsin, diastase, etc.

(*d*) A course in water analysis.

(*e*) A course in milk and butter analysis.

(*f*) A course in physiological chemistry.

(*g*) A course in organic preparations.

(*h*) An advanced course in toxicological analysis.

(*i*) The presentation of a satisfactory thesis.

Any one who completes the work of the three-year special course in such a manner as to prove himself a competent analyst will be granted the degree of Pharmaceutical Chemist.

The pharmacy department of this institution is a member in good standing of the American Conference of Pharmaceutical Faculties.

TEXT AND REFERENCE BOOKS.

Caspari's Treatise on Pharmacy, Sayre's Organic Materia Medica and Pharmacognosy, Culbreth's Materia Medica and Pharmacognosy, Scoville's The Art of Compounding, Beal's Prescription Practice, Dorland's Pocket Medical Dictionary, Ruddiman's Incompatibilities in Prescriptions, Lyon's Pharmaceutical Assaying, United States Pharmacopœia, United States Dispensatory, National Dispensatory, National-Standard Dispensatory, King's American Dispensatory, Prescott's Organic Analysis, Allen's Commercial Organic Analysis, Pharmaceutical Journals, Reports of American Pharmaceutical Association.

PHYSIOLOGY, VETERINARY SCIENCE, AND VETERINARY MEDICINE.

PROFESSOR CARY.

INSTRUCTOR McADORY.

INSTRUCTOR CASE.

LECTURER BAHNSEN.

LECTURER STAPLES.

PHYSIOLOGY AND VETERINARY SCIENCE.

501. *Physiology*: The students in the regular and special agricultural course, in all of the pharmacy courses, in the course in chemistry and metallurgy, and the three-year course in veterinary medicine and surgery, all study elementary physiology. The aim of the course is to teach anatomy, histology, hygiene, and sanitation. The instruction is given by lectures, demonstrations, and text-book. Text-book, Huxley's Physiology. *Two hours, entire session.*

502. *Veterinary science*: For students in agriculture. Lectures and chemical work in the junior year. In the senior year, the student may elect, with the consent of the professor in charge, six hours in the regular three-year veterinary course. The aim of the instruction given to the agricultural students is to teach such lessons as will enable them to prevent many diseases on the farm by correct hygiene and sanitation. At the same time, they will be instructed in the ways and means of treating and handling the common diseases of farm animals. This work will prepare them for "first aid" treatment and emergencies as well as for the course in veterinary medicine and surgery. *Five hours, junior year*; *six hours, senior year* (elective).

Veterinary Medicine and Surgery.

The three-year course in veterinary medicine and surgery leads to the degree of Doctor of Veterinary Medicine. It is the outgrowth of th fifteen years' work of the department of physiology and veterinary science. Moreover, it has been established to meet the demand of the young men of the South who desire to become educated veterinarians, and for students who desire to prepare for the study of human medicine.

Equipment.

The main veterinary building has an independent gas plant and a connected sewer system. Its lights come from the electrical department, and the water supply comes from the new college water system. The building contains an office, two lecture rooms, a physiological laboratory, and a museum on the first floor; on the second floor, are located two research laboratory rooms, a library and reading room, a large incubator room, and all the necessary apparatus for pathological, histological, and bacteriological work.

A separate building is used as a house for small animals (rabbits, guinea pigs, pigeons, etc.) that are employed for experimental and demonstration work in bacteriology, histology, and physiology.

The anatomy division has a separate one-story brick building with good ventilation and extensive sky light. It is supplied with gas, water, and electric lights. The anatomy museum contains the skeletons of man, the horse, the ox, the sheep, and the pig, and models of the limbs and special organs of man and the horse. It is also supplied with different lots of bones of the horse and with dissected and dried limbs showing the relation and attachment of muscles. An hexagonal operating pavilion thirty-six feet in diameter has just been completed. It is supplied with water and electric lights and lockers for students.

The veterinary hospital contains five box stalls, four open single stalls, an office, and a feed room, on the first floor; a large room for storing hay, fodder, and feed, is found on the upper floor. The veterinary department has for its exclusive use about six acres of land divided into lots, pens, and paddocks. In one of the lots, are located two large sheds having a capacity for accommodating one hundred and twenty-five cattle or large animals. These sheds are used for tick fever inoculation purposes and for isolation of animals affected with infectious diseases.

The three-year veterinary course students take five terms of work in the department of animal industry and dairying, one year's work in pharmacy; four terms of work in the chemical department, one year's work in botany and one year's work in physics. The facilities and equipment of these departments are excellent, as may be seen by referring to the description of each of them in this catalogue.

The veterinary course is especially strong in practical laboratory work.

1. In anatomy the work of dissection is carried on throughout the entire course of three years. It is a well established fact that useful surgical or real anatomy can not be acquired without careful and thorough work in the dissecting room. Special stress is given to comparative anatomy of the horse, ox, sheep, pig, and dog.

2. Clinical laboratory work is also required throughout the course. The clinical work comes six days in the week and the cases presented embrace mules, horses, cattle, sheep, dogs, poultry, and hogs. The variety is such as to illustrate a large number of diseases, surgical operations, and therapeutic applications.

3. The physiological laboratory is supplied with apparatus for tests and experiments in physiology.

4. The laboratory for pathology, histology, and bacteriology is extensive, and is fully fitted with the latest apparatus. This laboratory has been the outgrowth of sixteen years of cumulative additions. The aim is to teach students to work in the laboratory rather than to memorize the printed pages of the text books.

5. In chemistry and toxicology the students work in one of the best of chemical laboratories.

6. In pharmacy, the students work in practical pharmacy for five hours a week for a year. In this they learn to recognize, compound, and dispense drugs.

7. The animal husbandry department affords ample facilities for practice in feeding and judging cattle, sheep, hogs, and mules.

8. The dairy department gives practical laboratory work in dairy operations and in handling and feeding dairy cattle.

9. The botanical department is well equipped and gives excellent opportunity for laboratory work.

10. The subjects in the course of study are such as are required in the leading veterinary colleges of America. The course meets the requirements of the American Veterinary Medical Association. The teaching staff meets the requirements of the best standards. The length of the course is three years of nine months each.

COURSES OF STUDY.

FIRST YEAR.

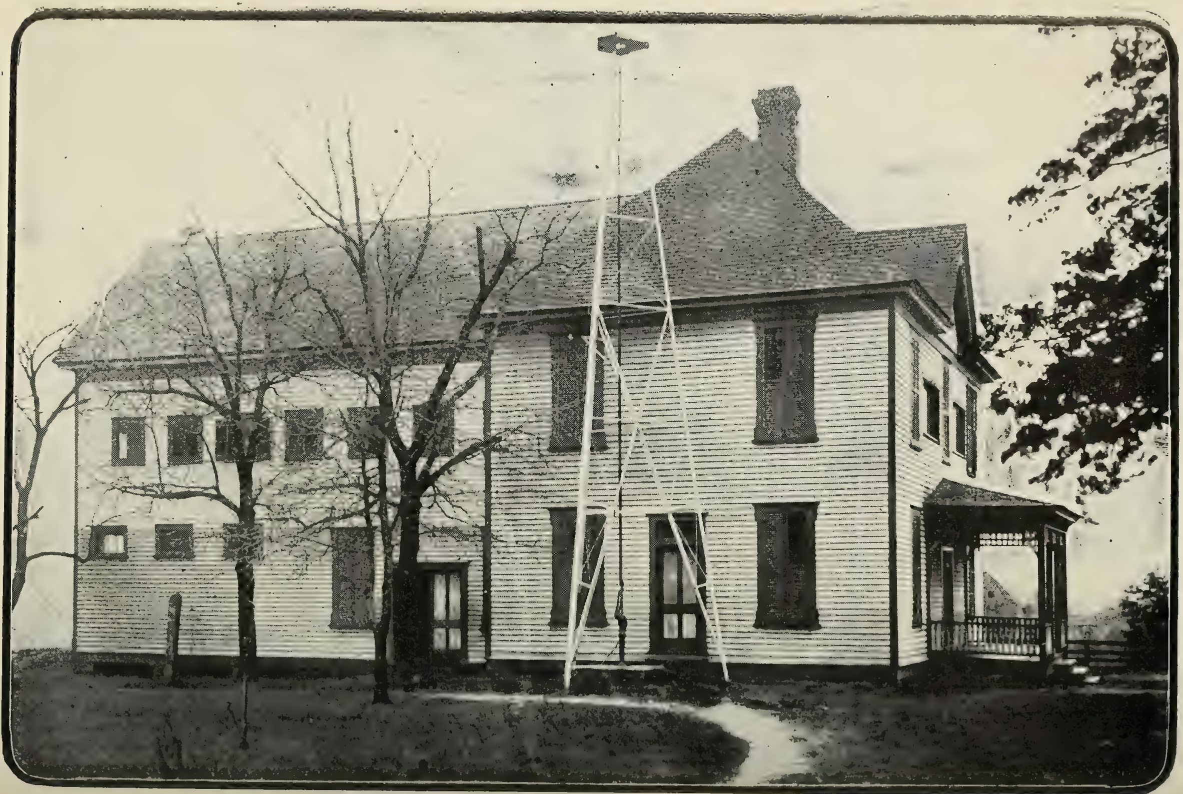
503. *Veterinary physiology recitations*: Treats of the actions or functions of the various vital organs of the animal body. Attention is given to the laws of health and the conditions most favorable to the healthy action of the animal body. *Two hours, first and second terms.*

504. *Histology*: Deals with the minute anatomy of the various tissues. It includes methods of fixing, imbedding, sectioning, mounting, standing, and a microscopical study of tissues. Histology is studied by lectures and by laboratory work. *Five hours, first and second terms.*

505. *Embryology*: This is a study of the development of the embryo and is designed to prepare the student for the study and practice of obstetrics. *Five hours, third term.*

506. *Comparative anatomy*: Based upon the descriptive anatomy of the horse. It includes lectures and dissection. The course in anatomy will be continued in the dissecting room throughout the second and third years. The work will be taken up in the following order:

(a). Osteology—Requires a thorough knowledge of the bones of the horse and the comparative variations as found in the ox, pig, dog, and sheep.



VETERINARY LABORATORY.

(*b*). Arthrology—The course consists in a study of the joints or articulations and the synovial sacs.

(c). Myology—Includes a study of the muscles with their tendons and synovial sheaths or bursae.

(*d*). Splanchnology—Treats of the internal organs found in the thorax and abdomen. Special attention will be given to these subjects in the thorax and abdomen. Special attention will be given to these subjects in the horse, ox, sheep, pig, dog, and cat. It is designed both for the practitioner and meat inspector.

(*e*). Angiology—It treats of the blood vessels and heart and lymph vessels and glands. This is designed to meet the requirements of the practitioner and meat inspector; hence the students locate the lymph glands in the horse, ox, sheep, pig, and dog.

(*f*). Neurology—Calls forth a study of the cerebro-spinal and sympathetic nervous systems.

(*g*). Special anatomy—Comprises the study of the organs of special sense, the urino-genital organs, the foot, and the larynx. *Two hours lectures and twelve hours laboratory work, first and second terms.*

SECOND YEAR.

507. *Physiology laboratory*: Some of the course deals with chemical physiology and the vital processes of the organs of the domestic animals. *Two hours, third term.*

508. *Bacteriology*: The principles of bacteriology and chief pathogenic organisms are carefully studied. *Three hours in class room and three hours in laboratory, first term and first half of the second term.*

509. *Pathology*: This deals with the general pathological anatomy and histology as observed in man and the different species of animals, and a study of the cellular changes in diseased tissues and organs. *Three hours recitations and three hours in laboratories, last half of the second term and all of the third term.*

510. *Obstetrics*: Practical work is given as cases are presented. *Two hours, first and second terms.*

511. *Surgical exercises*: In these exercises the student is required to perform the principal surgical operations. *Two hours, third term.*

THIRD YEAR.

512. *Special surgery*: This includes surgery of the head, eye, neck, chets, limbs, skin, abdominal organs, urino-genital system, and castration. It consists of lectures supplemented by practical operations. *Two hours, second and third terms.*

513. *Infectious diseases*: This is a study of the diagnosis and preventive sanitation of the animal plagues. *Two hours first term, three hours second term.*

514. *Parasites*: This subject deals with the parasitic infesta-

tions of man and animals. An abundance of material is available. *Two hours, second and third terms.*

515. *Meat inspection*: Embraces recitations, lectures, and abbatoir inspections in the smaller and larger cities of the State. *Two hours, first and second terms.*

516. *Milk inspection*: The course includes the study of milk adulterants, sanitary construction of dairy barns and dairy houses, conditions of cows and the diseases of dairy cattle; the feed, the water supply, the dairy cans, bottles and wagons, the disease and filth germs of milk. *Three hours, third term.*

517. *Urinalysis*: This course is largely laboratory work. *Three hours, third term.*

518. *Thesis*: Development and preparation of an original theme on some subject relating to veterinary medicine and surgery, or veterinary sanitation and hygiene is required. *Four hours, entire year.*

SECOND AND THIRD YEARS.

519. *General surgery*: This course embraces the general principles of surgery. *Two hours, third term of second year and first term of third year.*

520. *Clinical laboratory*: Free clinics. Students are required to study each case. A great variety of cases are always presented. *One to two hours each day during second and third years.*

521. *Materia medica and therapeutics*: They embrace a study of the principal drugs used in veterinary medicine, their doses, physiological actions, therapeutic uses, and prescription writing. *Third term of second year and first and second terms of third year.*

522. *Veterinary medicine*: This deals with the principles and practice of veterinary medicine. *Three hours, throughout second and third years.*

523. *Physiology and hygiene—Teachers' course*: The department can give the following line of instruction to prospective Alabama teachers:

1. Structure of human body and animals.
    (*a*). Study of cells, tissues, and organs.
    (*b*). How to use the smaller animals in teaching naked eye anatomy.
2. Physiological actions of the different parts and products of the animal and the human body. This embodies:
    (*a*). Functional tests.
    (*b*). Chemico-physiological tests.
    (*c*). Physico-physiological tests.
3. Hygiene, embracing instruction in personal health problems.
4. Sanitation, including health conditions of cities, homes, public buildings, farms, barns, dairies, etc.
5. Care of animals on the farm and in the city.

HORTICULTURE.

EXPERIMENT STATION.

GRADUATE WORK.

524. *Graduate course*: This department offers postgraduate work in histology, pathology, bacteriology, meat inspection, milk inspection, and anatomy.

TEXT-BOOKS.

The following text-books are used:

General chemistry, Remsen's College Chemistry; physiology, recitations, Huxley's Physiology; laboratory, Fish's Elementary Exercises in Physiology; Smith's Manual of Veterinary Physiology; physics to be announced in September; anatomy, Chauveau's Comparative Anatomy; Sisson's Veterinary Anatomy; clinical laboratory, blank books or note books; microscopy, Gage's; histology, Piersol, Bailey, Schafer, lectures; embryology, Hertwig-Mark, Minot, lectures; live stock management, lectures, and text books to be announced later; feeding live stock, Smith, Henry, Jordan; animal husbandry, Craig; lectures: botany, lectures; pharmacy, lectures; bacteriology, Jordan's Bacteriology, Moore's Laboratory Guide, lectures; pathology, Zeigler's, and lectures; special pathology, lectures; obstetrics, lectures, DeBruin, Fleming, Dalrymple; general surgery, lectures, Frohner; special surgery, lectures, Moeller, Merillat, Frohner; Surgical Exercises, W. L. Williams; Restraint of Animals, White; materia medica and therapeutics, Wilcox, Winslow, Fish, Quitman; Veterinary Medicine, Law, Vols. 1, 2, 3, 4; Parasites, Neuman, Law Vol. 5, Styles, Ransom; milk and meat inspection, Van Slyke, Conn, Ostertag, Peters; toxicology, Tanner, Fish; Urinalysis, Fish.

HORTICULTURE.

PROFESSOR MACKINTOSH.

ASSISTANT WILLIAMS.

Instruction in this department consists of lectures, recitations, and exercises in the greenhouse laboratory, orchards, and gardens of the experiment station. It is the aim to give a thorough course in the practical and scientific phases of the growing of our economic fruit, vegetable, and ornamental plants.

JUNIOR CLASS.

601. *Principles of plant culture*: The care of horticultural plants in general. Propagation, transplanting, pruning, and spraying. *Lectures three hours, laboratory four hours, first and second terms.*

602. *Fruit growing*: Special attention is given to the growing of fruits in this portion of the United States. *Three hours, second term* (*Elective.*)

603. *Pomology*: A study of the varieties of fruits and methods of growing, etc. *Three hours, first term.* (*Elective.*)

604. *Vegetable gardening.* With special reference to the growing of vegetables for home and market. *Three hours, third term.*

605. *Landscape gardening*: An introduction to the subject as an art of design with practical field exercises on improvement of the grounds about farm homes and schools. A study of the trees, shrubs, vines, and other plants especially adapted to this section will also be made. *Lectures three hours, laboratory two hours.* (*Elective.*)

606. *Spraying*: A study of the spray mixtures used in controlling the insect and fungous enemies of fruits and vegetables. *Laboratory, four hours, third term.* (*Elective.*)

607. *Greenhouse management*: Care of greenhouses, hotbeds, and coldframes. The growing of greenhouse plants. *Four hours, second term.*

SENIOR CLASS.

608. *Forestry*: A study of the forest conditions of Alabama. Care of woodlots. Uses of wood and methods of preservation. *Three hours lectures, two hours laboratory, second term.*

609. Methods of teaching elementary horticulture. Texts, authors, experiments suitable for primary grades.

Thesis.—Each student in Group "B" must select a subject for a thesis to be presented at the end of the session.

ENTOMOLOGY.

PROFESSOR HINDS.

ASSISTANT TURNER.

In accordance with the provision therefor in the catalogue for 1908, the work in entomology is now required of all senior students taking an agricultural course. The work is given during the fall and spring terms and consists of lectures, laboratory work, and field exercises. Within the brief time that is available, three hours of lectures and two of laboratory work each week, only some of the most important phases of the subject can be dealt with and the lectures are therefore given in as condensed form as possible.

The objects of the work in this department are principally two: First, to familiarize students who anticipate pursuing any agricultural line of work with the general facts of entomology as an educational science, and with its importance as an economic subject. Also to familiarize them with the common insect pests and with proper measures for their control. Second, to lay a foundation for advanced work in this subject for those men who may care to pursue a post-graduate study in preparation for some of the very attractive openings in this line.

Excellent accommodations for the department are provided in Comer Agricultural Hall. A combined class and laboratory room provides accommodation for forty or fifty men. In connection with the range of green houses, there is provided a large laboratory room for insecticides and similar subjects, and an insectery, 16x40 feet, within which the study of insect problems may be conducted at any time under controllable conditions.

The instruction in this subject is given during the first and third terms of the senior year. It consists principally of lectures which are supplemented by laboratory and field exercises. So far as possible the subject under consideration will be illustrated by special entomological collections, photographs, and actual examples of the insect at work. No special text-books are required, but the most pertinent works of general entomology are available for use in reference and the experiment station publications which are also constantly available for the use of all students.

701. *Structure and development of insects*: The general relation of insects to other animals, showing their origin and distinguishing characteristics and the characters upon which they are classified, is here considered. A general study is made of the structure and physiology of insects relating to fundamental principles in their life, habits and reproduction. A study is also made of the most important points of collecting, mounting, and preserving insects.

702. *Ecology of insects*: Under this head are included some of the most important and interesting subjects dealing with the relation of insects to the health and welfare of mankind through transmission of diseases and production of articles having large commercial value. General problems of insect injury and its control through the exceedingly important and complicated influences of many factors of natural control including parasites, predacous enemies, and climatic conditions, are also considered.

703. *Important insect pests*: As full a study as the time permits is made of insect pests, especially those of importance in the

orchard, garden and green house, the enemies of field crops, stored products, etc.

704. *Methods in insect control*: The principles of insecticide preparation and application are explained and illustrated. Practice in the actual preparation of the most commonly used materials is given to emphasize proper and desirable methods. The best types of spraying apparatus are well illustrated and the student familiarized with the desirable points for special lines of work. The important effects of improved agricultural practice are strongly emphasized.

ANIMAL INDUSTRY.

PROFESSOR GRAY.

ASSISTANT RIDGWAY.

Instruction in this department is given in the class room, in the laboratories, and upon the animal industry farm with the stock. Class room work in dairy instruction is supplemented and strengthened and made practical by requiring each student to work in the dairy laboratory where butter is made, where the Babcock test is used, and where the lactic acid in cream is determined, etc. While lectures are given on how to judge animals, the instruction does not stop with the lectures; the students are taken to the barn and feed-lots where animals are placed before them and each student is required to make a written report concerning the animal. The live stock provided for the students' use in studying breeds and judging animals consists of Angus, Jerseys, Hereford, and Shorthorn cattle; Duroc-Jersey, Berkshire, and Poland China hogs; Southdown, Dorset, common, and grade sheep.

The department now has the complete herd books of practically all the leading breeds of live stock in America. By the use of these the student is enabled to inform himself in regard to all pedigrees and to study the different scales of points which the breeders have adopted to represent the highest types of the various breeds.

The student is given an opportunity to specialize in animal industry throughout the senior year.

FRESHMAN CLASS.

801. *Breeds of live stock*: The object is to study the original

history of development, and characteristics of each one of the principal breeds of live stock, and to discuss the special adaptability of each breed to Southern conditions. The lecture work is supplemented, as far as possible, by representative animals of the breed under discussion. *Lectures; two hours, third term.*

SOPHOMORE CLASS.

802. *Dairying*: The study of the secretion, character, and composition of milk. Proper methods of handling milk and cream for consumption; Pasteurizing, sterilizing. The students are given thorough work in using the Babcock test and the lactometer, and the different acid tests, together with the ordinary tests for the purity of milk and its adulteration. They are also drilled in all the phases of butter making. *Lecture and laboratory work; two hours, first term.*

803. *Judging live stock*: The object of this course is to get the student familiar with the dairy and beef types of animals and to appreciate their difference in function and conformation. Work is also given in judging swine and sheep. Instruction is given largely by the use of the score card. *Laboratory; two hours, second term.*

JUNIOR CLASS.

804. *Principles of feeding*: The processes and requirements of the animal body are first considered, as the digestion and the utilization of food and conditions affecting them. Then the common feeding stuffs are considered and a study is made of their composition, their comparative value considered chemically and physiologically, and with reference to their fertilizing constituents. Work is given in compounding rations for the various kinds of live stock. *Lectures; two hours, second and third terms.*

805. *Herd book study*: This includes a study of the various herd books with a view to becoming familiar with the pedigrees of the leading strains and families of the different breeds of live stock. The second one-half of the term is devoted to judging horses and mules. *Laboratory; two hours, second term.*

SENIOR CLASS.

806. *Principles of breeding*: This course embraces the study of the principles of breeding live stock, including the study of variation, its extent and causes; heredity from a statistical standpoint; selection; importance of fecundity, and the use, or abuse of in-breeding, cross-breeding, grading-up, with a presentation of the practical application of these principles to the breeder conditions. *Lectures; two hours first and second terms.*

807. *Practical feeding*: This course consists of a series of lectures, supplemented by reference reading, upon the most profita-

ble methods of producing, finishing, and marketing swine, beef cattle, and lambs. Feeding dairy cows and marketing the dairy products are also given consideration. *Lectures; two hours, first term.*

808. *Meats*: This consists of a study of the structure and composition of meats, quantity, cost, and food value of the various cuts of beef, mutton, and pork; exercises are also given in judging the carcasses of the different classes of animals. A study is made of how to home-dress and home-cure pork. Lectures are given upon the effect of feeding and breeding of the animals as affecting the value of the carcass and the quality of the meat. *Laboratory; two hours, second term.*

809. *Judging horses and Mules*: Here the student is given an opportunity to become familiar with the various classes of horses and mules which are adapted to Alabama conditions and to study the conformation of each class. *Laboratory; two hours, first term.*

FIRST YEAR VETERINARY MEDICINE.

810. *Live stock management*: This course is outlined to meet the requirements of the veterinary students. It consists of a series of lectures on the care, housing, and management of horses, cattle, sheep, and swine. *Lectures; two hours, first term.*

811. *Judging live stock*: For the first year veterinary students. It consists in judging stock, special reference being given to horses and mules and dairy cattle. The object is to get the student familiar with the normal animal body in order that the abnormal or diseased conditions may be readily recognized. *Laboratory; two hours, third term.*

Ample opportunity and encouragement is extended to those students who wish to do postgraduate work in animal industry. With the completion of the new building there will be opened up fully equipped laboratories for work in this department. Applicants for graduate work will be assigned special research work in some line of animal industry and will be aided in their line of investigation.

ORGANIZATIONS.

CADET BAND.

A. L. THOMAS, Bandmaster.

Three musical organizations are now maintained—the band, the orchestra, and the glee club.

Membership in all organizations is open to any student, provided, of course, the applicant has talent.

The band is maintained by the college for students who desire to develop their musical ability and for those who wish to learn music. It furnishes music for all college exercises and takes part in the military manœuvres. Regular and individual instruction is given free of charge during the first term, embodying the rudiments of music and general musical information in conjunction with the practical instruction on the instrument. Public concerts are given weekly during the second term, and engagements elsewhere are usually arranged after this work.

A gold medal is given each year by the bandmaster to the member who makes the best record.

The orchestra is an organization for musical recreation, and members are carefully selected by the director, according to their musical ability.

The glee club, comprising the quartet, chorus, and stringed instruments, is a student organization.

The services of a musician are secured to assist with the instruction and training of the quartet and chorus. Two concerts are given at the college and a concert tour is usually arranged during the third term.

YOUNG MEN'S CHRISTIAN ASSOCIATION.

This association is regularly organized and a suite of well furnished rooms on the second floor of the library has been set apart for its exclusive use. Through its weekly meetings it exerts a wholesome Christian influence among the students.

Students are advised to unite with the association when they enter the college.

The ladies of the different churches in Auburn are organized into an auxiliary association to the Y. M. C. A. of the college.

The following are the officers of the association:

James Arthur Parrish	President
William Carter Oliver	Vice-President
Edwin William Lind	Treasurer
Albert Leon Young	Recording Secretary
Walter Alexander Brown	Librarian

LITERARY SOCIETIES.

There are two literary societies connected with the Institute—the Wirt and the Websterian. Each has a hall in the main building.

These societies hold celebrations on the evenings of Thanksgiving day and 22nd of February. A gentleman, selected by the faculty, is invited to deliver an address before the literary societies at Commencement.

To encourage the literary societies the trustees have directed that a medal be awarded on Commencement Day to the member of each society who is both efficient and regular in attendance, and who is the best debater. The method of selection is determined by the faculty.

SOCIETY OF THE ALUMNI.

The annual alumni oration is delivered by a member of the society in Langdon Hall on Alumni Day, Tuesday of Commencement week.

OFFICERS.

Frank C. Dillard, '75	Orator
Edwin B. Joseph, '97, Montgomery, Ala.	President
R. D. Webb, '97, Auburn, Ala.	Secretary and Treasurer
C. C. Certain, '06, Auburn, Ala.	Assistant Secretary

Vice-Presidents.

John V. Denson, '05	LaFayette, Ala.
J. C. Street, '80	Opelika, Ala.
W. R. Samford, '05	Opelika, Ala.
Champe S. Andrews, '94	New York City
W. R. Tichenor, '96	Atlanta, Ga.
L. P. Hall, '04	New York City

W. H. Negus, '97	Greenville, Miss.
Geo. Dunglinson, '04	Bramwell, W. Va.
B. B. Ross, '81	Auburn, Ala
W. K. Terry, '99	Birmingham, Ala.
T. W. Wert, '99	Decatur, Ala.
R. apC. Jones, '87	Selma, Ala.
J. B. Hobdy, '97	Albertville, Ala
W. F. Feagin, '92	Montgomery, Ala.
Thos. Bragg, '01	Auburn, Ala.
John McDuffie, '04	River Ridge, Ala.
Howard Lamar, '82	Jasper, Ala.

ENGINEERING SOCIETY.

All students in the courses of engineering and architecture are eligible for membership in the Engineering Society. Meetings are held twice a month, and the chief purpose of the society is to promote personal fellowship among the members, and closer affiliation with practical engineers. Prominent engineers in all lines are invited to address the society from time to time upon subjects connected with their work. At other meetings the program is supplied by the student members, thus giving opportunity for the students in one department to become somewhat familiar with the problems met with in other lines of engineering.

For the present, the meetings are held in Langdon Hall, but it is expected to provide suitable quarters for the society in the new W. L. Broun Engineering Building to be erected the coming year. No regular dues are required of the members, but an occasional assessment is made to cover necessary expenses.

OFFICERS.

C. A. Wilmore	President
J. G. Hanlin, Jr.	Vice-President
J. J. Keyes, Jr.	Vice-President
N. B. Buchanan	Secretary
A. L. Thomas	Treasurer

AGRICULTURAL CLUB.

The Agricultural Club was organized November 23, 1907. All students interested in agriculture and the agricultural sciences are eligible for membership. The members of the Agricultural Faculty take an active part in the work of the club. Meetings are held once a week, and an effort is made to promote interest in all lines of agriculture, to develop a spirit of good fellowship among the students of the course, and to bring them in contact with prominent workers of the science as opportunity offers to present them on the regular program.

Meetings are to be held in the auditorium of Comer Agricultural Hall.

OFFICERS.

G. J. Street	President
D. J. Burleson	Vice-President
R. A. Stratford	Secretary and Treasurer

MISCELLANEOUS.

GYMNASIUM AND ATHLETIC FIELD.

The gymnasium is situated at the west end of the athletic and drill grounds, and contains one room, 80x40 feet, with strong beams above for fastening the usual fixtures.

It is equipped with Spalding's gymnasium apparatus and is open to all students at stated hours, under the care of an officer.

The athletic field has a quarter-mile cinder track and ample space for football, baseball, and general athletics.

DRAKE ATHLETIC FIELD.

A new athletic field, named in honor of the Surgeon, Dr. J. H. Drake, has been provided for baseball, football, and track athletics. It is situated on the experiment station grounds near the gymnasium. It will be gradually beautified and equipped with necessary buildings and accommodations.

DISCIPLINE REGULATIONS.

The government of the college is administered by the president and faculty in accordance with the code of laws and regulations enacted by the trustees.

Each student upon entering is required to sign his name in the matriculation book and pledge himself to obey the rules and regulations of the college.

O. D. SMITH HALL.

All students are required to wear the prescribed uniform.

Attention to study and punctuality in attendance on recitations and all other duties are required of every student. Students are prohibited from having in their possession arms or weapons not issued for the performance of military duty, and also from using or causing to be brought into the college limits, intoxicating liquors.

Students are not permitted to participate in any public entertainment, or game, without previously obtaining the consent of the faculty.

No student will be permitted without the approval of his parent or guardian, to take part in a public game of football.

No student who has failed in two or more subjects will be permitted to be absent from college for athletic contests or other purposes.

(a) Every absence from recitation or examination is graded zero.

(b) When the grade of a student is lowered by reason of absence for which satisfactory excuse can be rendered, a special re-examination may be subsequently granted, and the grade made on the special re-examination alone is substituted for that previously received.

(c) Only sickness, as reported by the surgeon, or absence by reason of family sickness, or official or collegiate business, will constitute a satisfactory excuse for granting a re-examination.

When a student is called away from college by his parents for reasons other than those specified above, his zeroes for absence are not removed.

The term grade of a student is the average of his daily sessional and term examination marks, found by giving due weight to the term examination.

Privates of the senior class in full standing who are candidates for graduation may be excused by the president from all military drills, and also students over twenty-one years of age at *the time of entering college* that are permitted to devote their time to one special study, as chemistry, agriculture, pharmacy, or engineering, provided the time devoted to drill is spent by them in laboratory work.

No student can remain an officer who receives during the session more than one hundred demerits.

BOARDING.

The students board almost entirely with families of the town of Auburn, and thus enjoy all the protecting and beneficial influences of the family circle.

For each house an inspector is appointed, whose duty it is to report those who are guilty of any violation of order. The report of the inspector is made to the commandant at stated intervals.

Students, after selecting their boarding houses, are not permitted to make changes without obtaining permission from the president, and this permission is given only at the close of a term, except for special reasons approved by the parent.

MILITARY DRILL.

There are three regular military drills each week, and all undergraduate students, not physically incapacitated to bear arms, are required to engage in these exercises; privates of the senior class are exempt.

The drills are short and the duty involves no hardships. The military drill is a health-giving exercise, and its good effects in the development of the *physique* and improvement of the carriage of the cadet are manifest.

RELIGIOUS SERVICES.

Religious services are held every morning in the chapel.

All students, unless excused on the written request of parents for religious scruples, are required to attend these exercises, and also to attend the church of their choice on Sunday morning.

Opportunities are also offered for attending Bible classes every Sunday.

DISTINCTIONS.

Distinctions are awarded in the different subjects of each class to those students whose grade for the entire year is above ninety per cent.

Certificates of distinction are awarded in public on Commencement day to those who obtain an average of ninety per cent. in all the prescribed studies of a regular class; and also to those who obtain three distinctions in the freshman class, four in the sophomore class, five in the junior class, and six in the senior class; provided they have satisfactorily passed all the regular examinations of that session, and have not received forty demerits during the year.

A distinction is not given in the senior class if the average grade in any one subject is less than 75 per cent.

HONORS.

Members of the senior class who attain distinction at the final examinations with an average grade, in the subjects required, of 95 per cent. are published as

GRADUATES WITH HIGHEST HONOR.

Those who attain distinction with an average grade of 90 per cent. and less than 95 per cent. are published as

GRADUATES WITH HONOR.

Those who attain less than 90 per cent and more than 60 per cent. are published as *Graduates.*

Students of the classes lower than the senior who attain distinction with an average grade in the required subjects of 95 per cent. are published in alphabetical order as having attained *Highest Distinction.*

RECORDS AND REPORTS.

Daily records of the various exercises of the classes are kept by the officers of instruction.

At the close of each term and at regular intervals reports giving the grade made by each student are sent to the parent or guardian.

EXAMINATIONS.

Written examinations on the studies of the half-term are held by each professor during the months of October, February, and April. Each examination occupies one hour.

At the end of each term written examinations, or written and oral, are held on the studies passed over during that term.

Special examinations are held only by order of the faculty, and in no case will private examinations be permitted.

Students falling below the minimum grade at the final examinations can be promoted to full standing in the next higher class only on satisfactory examinations at the opening of the next session.

It is required that every student who enters the college shall remain through the examinations at the end of the term. Leaves of absence and honorable discharges will, therefore, not be granted within three weeks of the examination, except for providential reasons.

SCHOLARSHIPS—PRIZES.

The following scholarships and prizes have been established:

THE WILLIAM LEROY BROUN MEMORIAL SCHOLARSHIP OF $170, established by the Alumni Society in memory of the late distinguished president of the Institute.

THE LIGON SCHOLARSHIP of $170, established by Col. R. F. Ligon, Montgomery, Ala.

THE THOMAS SCHOLARSHIP OF $170, established by Judge William H. Thomas, Montgomery, Ala.

THE BALL SCHOLARSHIP OF $170, established by Mr. Fred S. Ball, Montgomery, Ala.

THE DUNKLIN SCHOLARSHIP OF $600, established by Mr. and Mrs. J. C. Street, Anniston, Ala., in memory of Prof. J. T. Dunklin, formerly professor of Latin in the college.

A scholarship has been established for worthy musicians who are in need of assistance in defraying their college expenses.

The scholarships enumerated above are loan scholarships, granted to worthy young men or women, to be returned after graduation. No interest is charged until one year after leaving college.

The above named scholarships and ten other scholarships are administered by the Alumni Society. For information address R. D. Webb, Secretary.

THE ORATORICAL PRIZE, medal to that member of the junior class who composed and delivered the best oration on junior class day of Commencement.

1908, *Walter Stanley Childs*, Georgia.

THE ORATORICAL PRIZE, for the Annual Inter-Literary Society contest, February 22nd.

1909, *Dudley Murfee Clements,* Lee County.

SOPHOMORE MEDAL IN DECLAMATION for annual contest, May 1st.

1908, *Dudley Murfee Clements,* Lee County.

PRIZE FOR BEST DEBATER, a medal given annually by the Board of Trustees to the best debater in the Wirt and Websterian Literary Societies each.

Wirt Society, *William Carter Oliver, Jr.,* Texas; Websterian Society, *William Ivy Pittman,* Houston County.

THE THOMAS ESSAY PRIZE, a gold medal offered by Judge William H. Thomas, of Montgomery, Ala., for the best essay by any undergraduate student of the college. The essay must be written under the supervision of the department of English.

1908, *Miss Frances Marion Knapp,* Lee County.

MUSIC MEDAL.

William Lee Newberry, Jefferson County.

BATTALION MEDAL, for best drilled soldier.

1908, *Julius Trimble Pearson,* Montgomery County.

PRIZE FOR BEST DRILLED COMPANY, a sword given by Board of Trustees.

1908, *Samuel Arrington Ellsberry,* Montgomery County.

LIBRARY.

Librarian, JAMES R. RUTLAND.

Assistant Librarian, MISS ANNE O. SHIVERS.

A beautiful Carnegie library building of stone and pressed brick has been erected. The reading room is 80x40 feet, and the building is equipped with every convenience. It is lighted by electricity and heated by steam. The capacity of the stack room is sixty thousand volumes. The library now contains about 23,000 bound volumes, including valuable reference and scientific books, with select editions of standard authors, and others suitable for students, carefully and recently selected. It is kept open eight hours daily for the use of students as a reading room and is thus made an important educational feature.

MUSEUM.

The museum occupies a large room in the third story of Main Building. It is provided with suitable cases and is equipped with valuable specimens and models of an instructive character.

EXPENSES.

There is no charge for tuition for a resident of Alabama.

Incidental fee, per session	$ 5.00
Library fee, per session	2.00
Surgeon's fee, per session	5.00
Laundry fee, per session	12.50
	$24.50

These fees are payable on matriculation. *By order of the trustees no fees can be remitted.*

Board, including lodging, fuel, and lights, is furnished at $12.50 to $15.00 per month.

For a non-resident of the state there is a charge of tuition of $20.00 per session, payable on matriculation, in addition to the annual fees, payable by all students.

The necessary expenses for a session, not including uniforms or books, are for a resident of Alabama, as follows:

College fees	$ 12.00	$ 12.00
Laundry fees	12.50	12.50
Board, lodging, fuel, and lights	112.50	135.00
Total	$137.00	$159.50

By special arrangement with the college authorities, Mrs. M. L. Mitchell and Mr. B. T. Blasingame will accommodate students with board, lodging, fuel, etc., for $9.50 per month.

By boarding at one of these houses, the necessary expenses may be reduced to $106.50 per session. This estimate does not include the cost of the uniform, about $14.00, nor of books, say from $5.00 to $15.00, or the laboratory fees in the higher classes, $5.00.

LABORATORY FEES.

For each student in the junior or senior laboratory in pharmacy, chemistry, electrical, or mechanical engineering, a fee of $5.00 per session is required for each department. This fee is payable *on admission to the laboratory,* and is not remitted. In the department of veterinary medicine, a dissecting fee of $10.00 is charged.

Special students in laboratory work will pay additional fees for each separate division of work, and will be charged with all material consumed in experiments.

NON-RESIDENT STUDENTS.

Tuition for students, not residents of Alabama, is $20.00 per session, unless remitted by the trustees to worthy students upon the recommendation of the faculty.

The remission of this tuition fee to non-resident students will be granted in the form of a free scholarship for the succeeding year to those who obtain a distinction the preceding year, or who, by reason of merit, are deemed worthy.

This tuition for non-residents is remitted to sons of ministers of the gospel.

HONOR SCHOLARSHIPS.

The following non-resident students were granted, each by reason of special merit in conduct and scholarship during the session of 1908-09, an honor scholarship, which exempted from tuition fees:

W. W. Alexander	Missouri
L. B. Ehrlich	Georgia
T. D. Futch	Florida
B. M. Goldgar	Georgia
W. A. Harman	Georgia
C. R. Kuchinski	Missouri
G. Lothrop	Texas
M. Lothrop	Texas
E. H. McCowen	Georgia

R. W. Moore	Georgia
W. C. Oliver	Texas
F. Ordway	Tennessee
E. R. Stauffacher	Georgia

UNIFORMS.

A uniform of cadet gray cloth is prescribed, which all undergraduate students are required to wear during the session. The uniforms are made by a contractor, and are of excellent cloth manufactured at the Charlottesville mill. A suit, including cap, costs at present $14.00. It is neat and serviceable, and less expensive than ordinary clothing.

CONTINGENT FEE.

A contingent fee of five dollars is required to be deposited by each student on matriculation to cover any special or general damage to college property for which he may be liable. General damages are assessed on the body of students.

At the close of the session the whole of the contingent fee, or the unexpended balance, is refunded to the student.

AMOUNT OF DEPOSIT.

Fees to be paid on entrance:

Incidental	$ 5.00	
Library	2.00	
Surgeon	5.00	
Contingent	5.00	
Uniform	14.00	
Laundry fee for session	12.50	
For a resident of Alabama	$43.50	—43.50
Tuition non-resident		$20.00
For a non-resident		$63.50

Besides the above, the student should deposit with the treasurer enough to pay for books, one month's board, incidentals, amounting to say $27.50. Hence, a resident of Alabama should deposit with the treasurer $70.00; a non-resident, $85.00. For a student entering after January 1st, the deposit for laundry fee is seven dollars ($7.00).

FUNDS OF STUDENTS.

Parents and guardians are advised to deposit with the treasurer of the college all funds desired for sons or wards, whether for regular charges or college fees or board, or for any other purpose. It is the duty of this officer to keep safely all funds placed in his hands, and to pay all expenses incurred by the students, including board, uniform, books, etc.

The college cannot be held responsible for the expenses of a student unless the funds are deposited under speciific instructions from the parent or guardian to the treasurer. No student should be permitted to have a large amount of pocket money as it brings only trouble and encourages idleness.

THESIS.

Each applicant for a degree is required to write and submit to the faculty a thesis, or oration, and read or deliver the same at Commencement, if required by the faculty.

There may be presented, with the approval of the professor in charge, a carefully written report of special work done in a laboratory, showing independent investigation and discussion of some subject.

It must be given to the Professor of English by the first of May.

The subject must be submitted for approval by January 1st.

SURGEON.

The surgeon is required to be present at the college daily, to visit at their quarters the cadets that are reported sick, and give all requisite medical attention without other charge than the regular surgeon's fee, paid on entering the Institute.

An infirmary has been established, and will be properly equipped.

LOCATION.

The Institute is situated in the town of Auburn, fifty-nine miles east of Montgomery, on the line of the Western Railroad.

The region is high and healthful, noted for its general good health and freedom from malaria, having an elevation of eight hundred and twenty-six feet above tide-water. By statute of the State the sale of spirituous liquors and the keeping of saloons of any kind are forbidden.

ACADEMIC YEAR.

The academic year for 1909–1910 commences on Wednesday, 8th September, 1909, and ends on Wednesday, 8th June, 1910, which is Commencement Day.

It is divided into three terms: The first term extends from the opening of the session to Wednesday, December 22nd; the second term begins Tuesday, January 4th, and ends March 27th; the third term continues to the close of the session.

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OF THE
UNIVERSITY OF ILLINOIS

VOL. V. NO. 1

THE BULLETIN OF THE

ALABAMA POLYTECHNIC INSTITUTE

AUBURN

CATALOGUE
1909-10

ISSUED QUARTERLY
BY THE INSTITUTE
APRIL, 1910

ENTERED AT POST-OFFICE, AUBURN ALA., AS SECOND-CLASS MATTER

CALENDAR 1910-11.

Session Begins	Wednesday, Sept. 7, 1910
Examination for Admission	Wednesday, Sept. 7, 1910
First Term Begins	Wednesday, Sept. 7, 1910
Mid-Term Examinations	Oct. 31-Nov. 2, 1910
Literary Society Celebration—Thanksgiving Day	Nov. 24, 1910
First Term Ends	Wednesday, Dec. 21, 1910
Second Term Begins	Tuesday, Jan. 3, 1911
Mid-Term Examinations	Feb. 9-11, 1911
Literary Society Celebration	Wednesday, Feb. 22, 1911
Senior Class Exercises	Wednesday, Feb. 22, 1911
Second Term Ends	Saturday, March 25, 1911
Third Term Begins	Sunday, March 26, 1911
Mid-Term Examinations	April 20-22, 1911
Senior Thesis Reported	Saturday, April 29, 1911
Sophomore Class Exercises	Monday, May 1, 1911
Field Day	Monday, May 1, 1911
Final Examinations Begin	Tuesday, May 23, 1911
Commencement Sermon	Sunday, June 4, 1911
Annual Meeting of Trustees	Monday, June 5, 1911
Junior Class Celebration, 10 A. M.	Monday, June 5, 1911
Military Exercises, 4 P. M.	Monday, June 5, 1911
Festival of Lights, 8 P. M.	Monday, June 5, 1911
Alumni Day	Tuesday, June 6, 1911
Military Exercises, 5 P. M.	Tuesday, June 6, 1911
Senior Class Celebration, 8 P. M.	Tuesday, June 6, 1911
Commencement Day	Wednesday, June 7, 1911

Main Building

OF THE
UNIVERSITY OF ILLINOIS

CATALOGUE

OF THE

ALABAMA POLYTECHNIC INSTITUTE

STATE COLLEGE

FOR THE

BENEFIT OF AGRICULTURE AND THE MECHANIC ARTS

AUBURN, ALABAMA

1910

Opelika, Ala.
Post Publishing Company
1910

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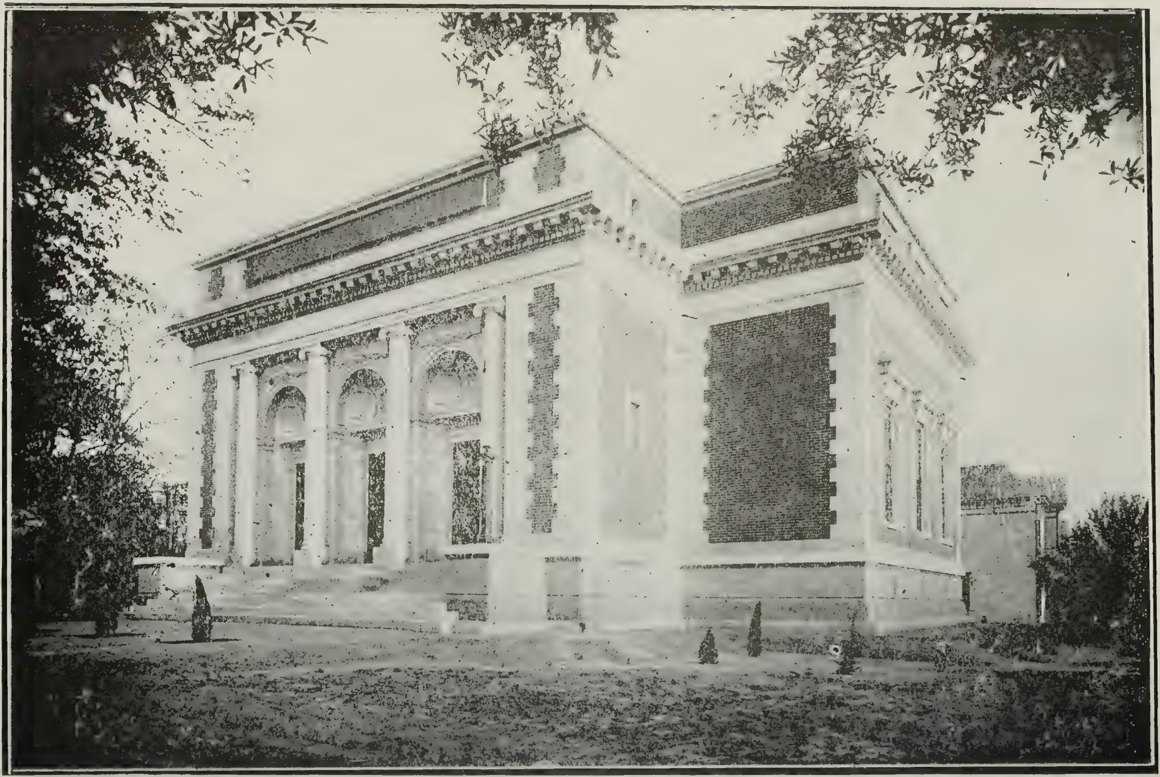

Library

The Institute is a distinctive school of science and its applications; being also the State College for the benefit of Agriculture and the Mechanic Arts, established by the State in 1872 by endowing it with the land-grant appropriation made by the United States Congress in 1862.

The leading object of the Institute, in conformity with the act of Congress and the acts of the State Legislature, is to teach the principles and applications of science.

In its course of instruction it gives prominence to the sciences and their applications, especially to those that relate to agriculture and the mechanic arts; and at the same time the discipline and liberal education obtained by the study of language and other sciences are not neglected.

All students are required to study the English language. The Latin, French, and German languages are also taught, and opportunity for their study is offered to students in any course.

The special and technical instruction given is thus based on a sound, general education.

In its different courses of education, work of great value to the youth of the State is accomplished by fitting them by a thorough science-discipline, in which manual training in the lower classes is made a prominent feature, for the successful and honorable performance of the responsible duties of life.

While every attention is given to the mental discipline of the students in endeavoring to train them to habits of accurate scientific thought, and thus to qualify them for the duties of life, their moral and Christian training will always constitute the prominent care and thought of the faculty. The Institute thus endeavors to educate as well as instruct, to form character as well as give information of value.

LABORATORIES AND FACILITIES FOR INSTRUCTION

The Institute possesses facilities for giving laboratory instruction in English, history, Latin, and the following departments of applied science:

I. IN CIVIL ENGINEERING.

A flourishing department of civil engineering has existed in the Institute since its foundation in 1872. The department occupies four rooms; office, lecture room, and spacious drawing rooms. A large amount of practical work is given the students of this department in field work.

Summer course.—An attendance upon two sessions of the four weeks' summer course, which offers practical work in plane and higher surveying and in engineering, is required of the students taking civil engineering and mining engineering.

The department is equipped with seven transits, six wye levels, one Dumpy level, one surveyor's compass, one railroad compass, one plane table, an ample supply of tapes, chains, level and transit rods, hand instruments, and other necessary equipment. For the summer work, a complete camping outfit has been purchased, consisting of fourteen wall tents, each accommodating four students, forty folding camp cots, fifty camp stools, cooking utensils, dishes, etc.

II. IN ELECTRICAL ENGINEERING.

In the new engineering building three rooms and an office are used by the department of electrical engineering. One of the rooms is a class room, another is used for the telephone laboratory, and the third is a laboratory for electrical measurements.

The wiring in this building is arranged so that alternating and direct currents of various voltages for power, lighting, and experimental purposes can be delivered to any room.

In connection with the laboratories there is installed a repair and construction shop furnished with a variety of hand tools and with power driven machine tools.

(*a*) The electrical measurement laboratory is furnished with a variety of resistance boxes, bridges, galvanometers, standard cells, condensers, etc., as well as two photometers. In addition to the laboratory instruments proper, just noted the department is provided with representatives of most of the types of commercial ammeters, voltmeters, and indicating and recording wattmeters, for A. C. and D. C. work. There is also a 30,000 volt transformer for break down tests of insulating materials.

(*b*) The telephone laboratory is provided with a full line of telephonic apparatus, phones, relays, condensers, plugs, jacks, lamp and other signals, etc., representative of the Bell and a number of independent telephone companies.

Single pieces are so mounted that they can be connected up in any desired manner and thus the connections of any particular system can be made up and tested out.

(*c*) The dynamo laboratory occupies another building. Power for experimental work in the dynamo laboratory is furnished by a 60 horse power, automatic, side crank, Harrisburg engine, belted to line shaft with clutch pulleys, a 15 horse power, variable speed, Westinghouse Type F. induction motor, with controller and special resistance grids, so that the motor may be operated under full load on any controller notch, and a 25 horse power Atlas engine.

The Atlas engine is equipped with a governor which permits the speed to be varied within wide limits without stopping the engine.

This laboratory is equipped with a large number of D. C. and A. C. generators, motors, and other appliances especially adapted for experimental work. In addition, the equipment of the power plant is so arranged as to be readily available for purposes of instruction and investigation.

III. IN MECHANICAL ENGINEERING.

A very important adjunct to the text-book work in the mechanical engineering course is the laboratory or experimental work that the students do during the senior year.

The work in heat and steam engineering is carried on in the power house, and the following apparatus is available for instruction: A 35 horse power cross compound engine, especially arranged for experimental work; a Wheeler condenser, and a Worthington air pump and circulating pump; a 160 horse power American Ball angle compound engine; a 125 horse power tandem compound Buckeye engine; a 60 horse power Harrisburg simple engine; a 25 horse power Harris-Corliss engine; a 20 horse power Atlas engine; a 200 horse power Stirling boiler; a 100 horse power Heine boiler; a Deane duplex steam pump; a 4 1-2 horse power gasoline engine; a 2 horse power two cycle gasoline engine; a 2 1-2 horse power kerosene engine; an Ericsson hot air engine; a New York air pump; a Westinghouse air pump; an Ingersoll-Sargent air compressor; an electric headlight engine; indicators, calorimeters, thermometer. pyrometers, scales, steam gauges, and apparatus for testing steam gauges.

A room on the first floor of Engineering Hall has been fitted up for a laboratory for the testing of materials. In it are installed a Riehle Brothers' testing machine arranged for making transverse, compression, and tension tests, and micrometer apparatus for measuring the deformation of the specimen under test. There is also provided a cement testing outfit consisting of a testing machine, sieves, briquette moulds, boiler and other apparatus for testing the strength, setting properties, fineness, and specific gravity of cement.

On the third floor of Engineering Hall a laboratory has been fitted up for testing fuels, gases and lubricants. The present equipment consists of a fuel calorimeter to determine the heating value of fuels, complete apparatus for collecting and testing flue and furnace gases, and apparatus for determining the viscosity, the specific gravity, the flash point and other properties of lubricating oils. A small electric motor has been installed to furnish power for grinding samples, furnishing air blast, stirring, and other such work.

IV. IN MECHANIC ARTS.

The instruction in shop work is used as an auxiliary in technical education, and as a school of manual training in the arts that constitute the foundation of most industrial pursuits. The work performed by the students is instructive in character, and is intended to give the greatest amount of instruction in principle with the least repetition of operations, and the smallest consumption of time. The work is executed from drawings, and the instructor in charge of the classes makes the lessons before the class, or gives such specific directions as may be necessary to enable the student to make them. This is supplemented by individual instruction.

All students in the freshman class take this shop work, three periods a week, each period being two hours long. The sophomore class takes two periods a week. The purpose is not to teach a trade, but to train the eye, the hand, and the mind to more perfect co-operation, a training which will be of value in any pursuit in life. This training involves the principles at the foundation of all trades, of equal value to a student who wishes afterwards to learn a trade.

Three-phase electric motors are used for driving the different shops, the motors receiving current from the large alternator in the dynamo room.

(*a*) The wood department is located in a room 90x50 feet, and is provided with a surface planer, a variety saw, a swing cut-off saw, a boring machine, and a grindstone. There are, in addition, thirty benches for carpentry work, with the necessary tools.

(*b*) The wood turning and pattern shop is located in a commodious room 40x60 feet, in the second story of the new power house. It is equipped with twenty-eight wood turning lathes, a grindstone, a band saw, a buzz planer, a pattern maker's lathe, a double circular saw, and a surface planer.

In each of these departments special tools for occasional use are kept in a tool room for the purpose.

In addition to the regular carpentry tools in the benches, each student is supplied with a set of chisels, and plane irons, with a locker to keep them in, and is held responsible for their care and condition.

(c) The forge shop is equipped with twenty-four down draft forges, with anvils, hammers, sledges, and other tools necessary for blacksmith work, including a punch and shear for cutting and punching iron, and a blacksmith drill. The blast is supplied by a blower which is also used for supplying the foundry cupola with blast. The smoke from the forges is removed through underground passages by a 60-inch exhaust fan and discharged into the chimney.

(d) The foundry is aquipped with a 23-inch Colliau cupola, having a melting capacity of 2,000 pounds of iron per hour, the necessary molding tools for bench and floor work, benches, a core oven, ladles, molding flasks, a foundry crane, etc. There is also a brass furnace with crucibles, crucible tongs, and the appliances necessary for making brass castings.

(*e*) The machine-shop is a room 30x100 feet, and is equipped with nine 14-inch, two 16-inch, and one 18-inch engine lathes, one 10-inch speed lathe, a 20-inch drill press, a 10-inch sensitive drill, a 16-inch shaper, two iron planers, one 22-inch by 5-feet and the other 26-inch by 6-feet, a back geared universal milling machine with vertical milling attachment, a water tool grinder, a bench grinder, a universal grinding machine, a universal cutter and reamer grinder, a twist drill grinder, and a power hack saw. Three of the engine laths have compound rests, three have taper attachments, and one is fitted with a turret and a large number of special tools and fixtures which practically convert it into a manufacturing lathe, and serve to illustrate the methods of manufacture by duplicate parts.

For chipping and filing, eighteen benches are fitted with vises and each student is supplied with hammer, chisels, files and such other tools as he may need, and a locker in which to keep them. A gasoline engine is installed in one end of the shop, and is used for driving at times when the steam plant is not running.

The tool room is supplied with general machinist tools, such as chucks, drills, reamers, taps, dies, gauges, jigs, and special tools. A convenient room is supplied with lockers for keeping clothes, and basins supplied with hot and cold water for the use of the students. The different shops are equipped with electric lamps, and current is furnished when necessary.

V. IN MINING ENGINEERING AND MINERALOGY.

The department of mining and geology occupies the west half of the new three-story engineering building. The third floor is divided into two well lighted rooms: (1) for lectures and recitations; (2) for draughting. The lecture room is provided with seats to accommodate sixty-four students. In this room is a screen and an electric stereopticon lantern for illustrating lectures. The draughting room has a capacity for thirty. Here the student receives instruction in mechanical draughting and in the calculation and plotting of field notes.

The second story is occupied by the professor's office and the mineralogical laboratory. The latter, like each of the two rooms on the third floor, occupies a floor space of about 960 square feet. In this laboratory there are accommodations for thirty-six. Each student is supplied with a blow pipe outfit, a drawer, and a locker, and each desk is piped for gas. The laboratory is equipped with a good type collection of minerals and lithological specimens as well as working specimens. There is a collection of fossils and casts illustrating the subject of historical geology. A very useful set of about 100 wooden models of crystals has just been imported. The geological department has several specific gravity balances of various kinds, contact and reflecting goniometers, a petrographical microscope, a good collection of slides both for the petrographical microscope, and the stereopticon lantern.

VI. ORE DRESSING.

The ground floor is occupied entirely by the metallurgical laboratory. This laboratory is well equipped with ore dressing plants. The concentrating plant consists of a gyratory crusher, two sets of roll crushers, two bucket elevators, four trommels or revolving screens, two classifiers, four Hartz jigs, and a seven-foot Wilfley concentrating table.

The stamp mill is of the full size Nissen type, circular discharge and interior amalgamating plate. The outside amalgamating plate is of full size, being ten feet long. The stamp mill and concentrating plant are fed from their respective bins by two different types of automatic feed. The ore before entering the bin is crushed to proper size by a Blake jaw crusher. The Model Cyanide plant illustrates the bleaching department of the cyanide process and the extractor box work. It consists of one solution tank, two sand tanks with false bottoms and filters, one gold tank, and a set of extractor box compartments of the up-flow type.

Besides the equipment already mentioned there is an automatic sampler. The cement floor in this department gives a good surface for illustrating coning and quartering in the process of hand sampling.

A twenty horse power motor is the source of power for this laboratory. Shafting, belting, and gears of various kinds transmit the power to the various machines so that a large variety of mechanism is illustrated.

VII. IN ARCHITECTURE.

The department of architecture is located in three well lighted rooms in the Main Building. A floor space of 2,250 square feet is occupied by a lecture room, 25x30, a large draughting room 30x35, and a library, office, and special draughting room, 15x30, all connected by doors. These rooms are well furnished with large, substantial drawing tables and extra tables for freehand drawing, fixtures and additional equipment; a collection of selected plaster casts of classic sculpture and architectural details, a large number of architects' drawings and signed original plates, and several hundred examples of freehand drawings of various sorts; a library of standard works and portfolios of plates illustrating details of decoration and composition; 250 lantern slides and many photographs of notable monuments of architecture; manufacturers' samples and catalogues; and various current journals devoted to architecture and the allied arts.

VIII. IN MECHANICAL DRAWING AND MACHINE DESIGN.

The department of mechanical drawing and machine design is supplied with equipment for teaching mechanical drawing, descriptive geometry, kinematics, and machine design.

A convenient cabinet is supplied with a complete set of Schroeder's descriptive geometry models for demonstrating the principles of descriptive geometry and mechanical drawing. A small reference library and a library of selected catalogues of manufacturers, which is being established for the use of students in advanced machine design, occupy a suitable case. A Beck vertical wall file, 36x48 inches, for filing commercial blue-prints, is filled with selected blue-prints furnished by prominent manufacturers, and is made use of by students in machine design.

A number of kinematic models and a large collection of engineering specialties, sectioned to show interior, which were donated by the various manufacturers, occupy a sectional case, and are used in elementary work in machine design and mechanical drawing. The filing envelopes, which contain the students' drawings, are kept in alphabetical arrangement in a case of drawers.

This department is equipped with an outfit for making blue-prints, consisting of two sun printing frames—18x24 inches and 30x42 inches, each mounted on a car and track, and suitable conveniences for washing and drying the prints.

All students in the lower classes are required to take drawing, a study which tends to discipline the mind, as well as to train the eye and hand to accuracy of observation and execution. Four large well-lighted drawing rooms, which will accommodate (at one period) two hundred and fifty students, are provided with tables, lock boxes, etc. The drawing rooms have been equipped with one hundred and fifty new drawing tables of the most modern pattern.

IX. IN PRACTICAL CHEMISTRY.

The chemical laboratory is supplied with modern apparatus, and its equipment affords excellent facilities for instruction in practical chemistry and for investigation.

The investigations that are undertaken in this laboratory by scientific experts, in connection with the work of the agricultural experiment station, are of a special value to advanced students, and afford them unusual opportunities to learn the methods of scientific research.

The building contains a large general laboratory, that accommodates sixty students, a special laboratory for seniors that will accommodate thirty students, a lecture room with a capacity for one hundred and fifty seats, and nine other rooms, all appropriated to instruction and research in chemistry.

The State chemical laboratory for the official analysis of fertilizers is connected with the department.

X. IN AGRICULTURE.

The agricultural experiment station, established in connection with the Institute, where experiments and scientific investigations relating to agriculture are daily made, affords unusual opportunities to students to become familiar with agriculture, its defects and remedies.

The students of agriculture accompany the professors in the field, where lectures are delivered in the presence of the objects discussed, and during the year exercises in practical agriculture of an educational character are given the students who enter upon this course of study.

The farm contains 304 acres.

XI. IN BOTANY AND BIOLOGY.

The laboratory for plant morphology and histology adjoins the lecture room of the professor, and is well equipped for investigation along these lines. The experimental work in plant physiology and pathology is conducted by the students in the laboratory and adjacent greenhouse, both of which are being rapidly equipped and altered to accommodate this important line of work.

A botanic garden is being developed and it is the intention to add as rapidly as possible representatives of the native flora of this state, and a good collection of the native medicinal plants. In this manner it is planned to secure from the garden its maximum assistance in the work of instruction. Special work in plant breeding and biometry will also be conducted in this garden.

XII. IN PHARMACY.

The laboratory of this department occupies the first and second floors of the annex to the chemical laboratory, and is provided with a sufficient supply of drugs and apparatus necessary for instruction in pharmaceutical preparations. The equipment of the laboratory includes a Laurent Polariscope; a Pulfrich refractometer; a vacuum distilling and drying apparatus, consisting of 1-2 horse power air pump, vacuum chamber, condenser, and Bruhl receiver for fractional distillation under diminished pressure, a three-horse power electric motor, a complete outfit for organic combustion work, and three chemical balances.

The new pharmaceutical laboratory on the basement floor of the pharmaceutical building, is fitted with steam, and has a full equipment for research work in pharmaceutical chemistry.

The students work in the laboratory with the professor from five to eight hours, six days in the week.

The facilities are increased as means are available.

XIII. IN PHYSIOLOGY AND VETERINARY SCIENCE.

The veterinary department occupies a separate two-story building with nine rooms. It is provided with lecture room, office, working and operating rooms for clinical practice, thoroughly equipped laboratories for work in bacteriology, milk and meat inspection, and with museum containing skeletons of the domestic animals for instruction. Free clinics are given every Saturday for the benefit of the students in veterinary science.

There is a separate dissecting room with cement floor and north roof light, constructed especially for this department. This laboratory is used by the professor and students each afternoon for three months.

XIV. IN HORTICULTURE.

A plot of twenty acres is devoted to orchards, vegetables, fruits, flowers, and grapes. There are well appointed greenhouses, fitted with modern apparatus for ventilation, heat, etc. Accurate experiments are conducted in this department in fruit growing and the culture of the various vegetables adapted to this climate. Students are given in this laboratory practical instruction in grafting, budding, spraying, fertilization, gathering and marketing crops. Valuable co-operative work with the United States Agricultural Department has been undertaken in this department.

XV. IN ENTOMOLOGY.

The completion of the new agricultural building makes excellent provision for laboratory work in this subject. The department is well equipped with apparatus for the microscopic work in entomological subjects. An excellent equipment for photographic and photomicrographic work is provided and instruction in these subjects will be given as occasion may arise. The laboratory work is closely related to the lecture work in most cases. Special attention is given to the structure and classification of insects, designed especially to familiarize the student with the principal groups into which insects are divided, and to give a basis for the selection of a proper method of treatment for their control.

The laboratory work includes also practical exercises in the preparation of the most important insecticides with proper types of construction in apparatus for applying various insecticides, and in a general way, making the student familiar with practical insecticidal work. There are also various exercises in the collection of insects and in the study of various pests which occur in the vicinity.

A reference library containing many general works upon entomology and important publications of the national bureau of entomology and of the state experiment stations is always accessible to students.

XVI. IN ANIMAL INDUSTRY.

The animal industry farm contains about 260 acres; upon this farm is a dairy barn, which accommodates eighteen cows and a beef cattle shed. The students visit the barns and sheds with the instructors and are thus afforded an opportunity to study the various breeds of live stock and to do stock judging work. In addition to the pure breeds of cattle, sheep and swine upon the farm, there are always graded and scrub animals, which are used in the experimental work in feeding, breeding, etc. All of this stock is used in instructional work. The sophomore students are given daily laboratory work in which they learn the use of the Babcock tester and of various types of cream separators; they are also taught the methods of making acidity tests, the use of the lactometer, how to make and judge butter, etc. During the second term of the sophomore year the students are given practice in scoring and judging dairy and beef cattle sheep, and swine. During the junior year instruction in judging horses and mules is given.

XVII. IN HISTORY AND ENGLISH.

All advanced work in history is conducted by the laboratory method. This plan has been successfully employed in the junior, the senior, and the graduate classes. A large and well lighted room has been set apart for this work in the new library building, where all the resources of the rapidly growing library are easily accessible. This room is equipped with maps, diagrams, charts, and suitable tables and chairs. The library is a depository for all government publications. These and other books on American history, with which it is well supplied, offer abundant material for research work in the history of our country. The publications collected by the experiment Station constitutes valuable material for study in industrial history.

Opportunity is also offered for laboratory work in English in the sophomore class. At present this is conducted in the same room as the historical research, and all the equipment of that department and of the general library is accessible. This affords an excellent opportunity for independent study of the various forms of discourse, narrative, descriptive, expository, and argumentative.

XVIII. IN PHYSICS.

The physical laboratory occupies two rooms, one of these being permanently darkened for experimental work in light. It is equipped with numerous standard instruments of precision, such as verniers, micrometers, cathetometers, a horizontal comparator, a Kater's revision pendulum, balances, etc., and a quantity of minor apparatus.

Recently there have been added a concave grating spectograph, a large induction coil of 12-inch spark, and other apparatus of value.

XIX. MILITARY TACTICS.

Instruction in this department is given in conformity with the act of Congress. Students receive the benefit of regular military drill, and in addition, the military system is used as a means of enforcing discipline and securing good order, promptness, and regularity in the performance of academic duties.

This department is supplied with cadet rifles and accoutrements for the corps.

BUILDINGS.

The frontispiece is a representation of the Main Building. It is 160x71 feet, and contains forty-five rooms. This building is not used for dormitories for students, but is appropriated to purposes of instruction and investigation.

It contains lecture rooms and offices of professors, museum, armory, etc.

LANGDON HALL.

This is a two-story building, 90x50 feet. The second story is the audience hall, used for commencement and other public occasions.

ELECTRICAL AND MECHANICAL LABORATORIES.

The first story of Langdon Hall is appropriated to the laboratory of first year wood work in mechanic arts.

The machine shop, forge shop, foundry, and boilers are installed each in separate buildings. A handsome new building, two stories in height, pressed brick and stone trimmings, has been recently constructed for occupation by the power plant on the first floor and by the pattern making department on the second floor. The dynamo laboratory occupies a separate building.

ENGINEERING HALL.

The alterations and additions to the William LeRoy Broun Engineering Hall will be completed and the building ready to be occupied by September, 1910. The finished structure is 250 feet long, 50 to 90 feet deep, and three and four stories in height, enclosing a floor area of 43,500 square feet. In construction this building is practically fire proof, and in exterior design conforms in general to the other buildings on the campus. The walls are laid up in selected red brick, with limestone and terra cotta trimmings.

Offices, lecture rooms, and laboratories for the Schools of Mechanical, Electrical, Mining, and Civil Engineering, Machine Design, and Drawing will be housed within this building, and all the interior accommodations are especially arranged to facilitate the special work of each department.

Expansion into fully equipped and commodious laboratories will very naturally increase the efficiency of the College of Engineering and Mines. This building, an illustration of which appears on the opposite page, was designed and superintended by the Department of Architecture.

THE CHEMICAL LABORATORY.

As shown on the opposite page, this is a two-story structure, 40x60 feet, with a rear projection, 35x60 feet, of one story and basement, and contains eight rooms. The exterior is of pressed brick, with cut stone trimmings, and terra cotta ornamentation.

In the basement are ample accommodations for assaying and storage.

The main laboratory will accommodate sixty students and contains improved working tables, with water, gas, and every necessary appliance for chemical work.

The laboratory for advanced work in chemistry will accommodate thirty students, and is equipped in the same manner. Adjoining this are two rooms which are used respectively as a balance room, and a room for work with spectroscope, polariscope, etc.

The second story contains a lecture room with seats and tables for one hundred and twenty students. Around the lecture room are cases containing crude and manufactured products, illustrating agricultural and mechanical chemistry, prominent subjects taught in the institution.

ANNEX TO CHEMICAL LABORATORY.

This is a three-story brick building, containing rooms for pharmacy and drawing.

The chemical laboratory for the Agricultural Experiment Station occupies a building 60x26 feet, and is appropriated exclusively for chemical investigation and research, and not for instruction.

DINING HALL.

The Otis D. Smith Dining Hall, constructed of stone and pressed brick, is two stories in height, and one hundred and forty feet in length. It will accommodate three hundred in the dining hall, and forty in the dormitories above. The style is semi-colonial, and is quite attractive.

LIBRARY BUILDING.

The new library building is a handsome structure of classical outline, monumental in its general effect. It is presented in an accompanying cut.

AGRICULTURAL BUILDING.

A handsome and commodious building has been erected for the departments of (1) agriculture, (2) horticulture, (3) botany, (4) entomology, and (5) animal industry, together with a separate set of buildings for practical work in each of these departments. It is the general opinion that there is no superior, if equal, group of buildings for agricultural purposes in the South. The building is three stories in height and is constructed of pressed brick with stone trimmings.

GRADUATES IN 1909

CLASS OF 1909

HONORS.

Members of the senior class who attain distinction with a grade of 95 per cent. are Graduates with Highest Honor. Those who attain a distinction with a grade of 90 per cent. and less than 95 per cent. are Graduates with Honor. Those who attain less than 90 per cent. and more than 60 per cent are Graduates.

DEGREES.

BACHELOR OF SCIENCE

GRADUATES.

Walter Clarence Abbott	Lee
Lawrence Adler	Calhoun
Walter Langdon Barker	Montgomery
Emmett Eason Binford	Lee
George Shields Bishop	Colbert
Austin Franklin Jefferson Boyd	Sumter
Richard Alva Burleson	Marengo
Samuel Welch Caldwell	Lee
Lano Cantrell	Marion
William Julian Carter	Marengo
Richard Bonner Cheatham	Jefferson
Walter Stanley Childs	Georgia
Albert Lionel Clothier	Mobile
George Edwin Clower	Lee
Holland Eugene Cox	Jefferson
Julian Jarnigan Culver	Lee
Harry George Culverhouse	Jefferson
Smith Coffee Daniell	Mississippi
Charles Jefferson Davis, Jr.	Florida
William Solomon Dennis	Pike
Daniel Jackson Duffee	Walker
Joseph DuBrutz Eagar, Jr.	Tennessee
Robert Brooke Ellyson	Mobile
John Treutlen Foy	Barbour
Oakley Mills Geibel	Montgomery
Gilbert Graffenreid Glover	Jefferson
Herman Grimes	Wilcox
William D. Hammack	Georgia
James Gray Hanlin	Colbert
Benjamin Edward Harris	Jefferson
Daniel Herren	Elmore

James Bradley Holman	Wilcox
Lewis Henry Hubbard	Montgomery
William Oliver Jelks	Georgia
Charles Roman Kuchinski	Missouri
Daniel MacDonald	Jefferson
Ramer Young MacIntyre	Georgia
Gordon Oliver McGehee	Montgomery
John T. McLure	Calhoun
Horace Lamar McWhorter	DeKalb
Roger Barton McWhorter	Colbert
James Marshall Mayes	Jefferson
Ray Meade	Jefferson
Thomas Cole Mitchell	Georgia
James Weston Moore	Jefferson
James Walter Motley	Randolph
William Thomas Owen, Jr.	Calhoun
William Henry Pace	Lee
Julius Trimble Pearson	Montgomery
John Taylor Postell	Georgia
Schuyler Harris Richardson	Limestone
Charles Francis Russell	Talladega
Lester Chauncey Smith	Montgomery
Robert Franklin Smyer	Cherokee
Bart Dannelly Stephens	Barbour
Reuben Johnson Stewart	Georgia
George Jefferson Street	Clay
Penrose Vass Stout	Montgomery
Laurel Franklin Summers	Dallas
George Washington Taylor	Choctaw
John James Weatherly	Calhoun
Bernard Augustus Webb	Montgomery
Samuel Oliver White	Tallapoosa
William Thomas White	Hale
Robert Wilson Williamson	Tennessee
Ernest Gordon Wilson	Georgia
Walter Woolf Wynne	Marengo
Granville Allen Young	Montgomery

GRADUATES WITH HONOR.

Chester Dewey Allis, Jr.	Jefferson
Thomas Beasley	Lee
Harry Jamison Chatterton	Limestone
Hattie Delia Finley	Blount
Benjamin Meyer Goldgar	Georgia
Moe Baruchoff Gottlieb	Macon
John Belton Hodges	Marion
Charles Alfred Jones	Lauderdale
John Luther Kennedy	Lauderdale
Edward William Lind	Jefferson
Herman Clarence Nixon	Calhoun
William Ivy Pittman	Houston

Josiah Whittaker Powell	Lowndes
Charles B. Pure Sullivan	Tallapoosa
Lesslie Warren Shook	Jackson
Iralee Whitaker	Lee

GRADUATE WITH HIGHEST HONOR.

James Grey Stelzenmuller	Baldwin

GRADUATES IN PHARMACY (PH. G.)

Roe Talbot Carter	Pike
William Wall Garrett	Elmore
Seymour Hall	Jefferson
Thaddeus Alonzo Ingram	Pike
James Hugh Kyzar	Pike
Leon Morgan Martin	Jefferson
Thomas Edwin Middlebrooks	Barbour
Rufus Peerson	Lauderdale
J. R. Persons	Montgomery
T. B. Sellers	Montgomery
John Slaughter Slaton	Madison
Olie Algar Strickland	Lowndes
Robert Alfred White	Covington

GRADUATES IN VETERINARY MEDICINE (D. V. M.)

William Rufus King Beck	Wilcox
William Monroe Howell	Barbour
Percy Wilbur Hudson	Lee
Isham Smith Ingram	Lee
James Ernest Threadgill	Marengo

POST-GRADUATE DEGREES.

MASTER OF SCIENCE.

Robert Edward Hodnette	Macon
Joseph Wilder Ridgway	Mississippi
Jacob Allen Walker	Tallapoosa
William Francis Ward	Lee

MASTER OF SCIENCE IN PHARMACEUTICAL CHEMISTRY.

George Henry Marsh	Pike

MECHANICAL ENGINEER.

Carl Gilbert Gaum	Jefferson
Walker Reynolds	Calhoun
Olin Conway Skinner	Lee
James Gardner Somerville	Pickens
William Redding Winship	Georgia

CIVIL ENGINEER.

Nathaniel Booker Buchanan	Madison
Ormon Nimmons Powell	Georgia

ELECTRICAL ENGINEER.

Nicholas Lawrence Baker	Lee
Augustus Kirby Clements	Lee
Marion Curtis Parmer	Lowndes
James Lister Skinner	Lee
William Edgar White	Lee
Daniel Elmer Wilkinson	Covington

ENGINEER OF MINES.

Clyde McNeel Howard	Autauga
Oroon Datus Whitaker	Lee

PROFESSIONAL DEGREES.

CIVIL ENGINEER.

Benjamin Baldwin Meriwether	Jefferson
Fulton Pace	Porto Rico

ENGINEER OF MINES.

Forney Renfro	Jefferson

ELECTRICAL ENGINEER.

Matthew Scott Sloan	Jefferson

DISTINGUISHED STUDENTS

DISTINCTIONS.

Students who receive a grade of 90 per cent. and less than 95 per cent. in three studies in the freshman class, in four in the sophomore class, in five in the junior class, and in six in the senior class, are distinguished for excellence in scholarship, and are awarded Certificates of Distinction. Those who receive a grade above 95 per cent. are awarded Certificates of Highest Distinction.

FRESHMAN CLASS.

DISTINCTION.

Henry Wells Brooks	Georgia
Charles Dean Chitty	Georgia
Frank Richard Curtis	Bibb
Augustus Baker Dean	Lee
John Frederick Duggar, Jr.	Lee
Henry Grady Ezell	Tennessee
Henry Wiley Grady	Chambers
Samuel Cheatham Harrell	Lee
Roy Miller Lilly	Georgia
Charles Edward Sauls	Georgia
Thomas Holmes Whitfield	Marengo

HIGHEST DISTINCTION.

Clarence Pax Andrew	Georgia
William Belmont Nickerson	Tallapoosa
John Emmett Pitts	Russell
Thomas Nimmons Powell	Georgia
Charles Coleman Thach, Jr.	Lee

SOPHOMORE CLASS.

DISTINCTION.

William Wrenshall Alexander	Missouri
Thomas Alfred Anderson	Calhoun
William Smith Bonner	Clay
Robert Waddell Chapman	Montgomery
John Eayres Davis	Mobile
Lewis Pritchett Fort	Dallas
Thomas Morris Francis	Calhoun
Thurston DuPuis Futch	Florida
Arthur Finley Harper	Jefferson
Gordon Hicks	Tallapoosa
Walter Alexander Hicks	Tallapoosa
Harry McCrorie Johnstone	Jefferson
Grafton Lothrop	Texas

Thomas Jasper Miles	Montgomery
Edmund Fay Pierce	Autauga
Mary Jane Ross	Lee
Richard Fuller Sams	Georgia
William Overton Winston	Sumter
Benjamin Allen Wooten, Jr.	Marengo

HIGHEST DISTINCTION.

William Davis Hall	Georgia

FIRST YEAR COURSE IN VETERINARY MEDICINE.

DISTINCTION.

George Washington Lewallen	Jackson
Bennett Thomas Simms	Sumter

SECOND YEAR COURSE IN VETERINARY MEDICINE.

DISTINCTION.

E. Tandy Hallman	Talladega

JUNIOR CLASS.

DISTINCTION.

David Jasper Burleson	Marion
Alto Lee Byrd	Lee
Henry Howard Davis	Geneva
Louis Breitenbach Ehrlich	Georgia
Covington Drane Jenkins	Georgia
John Judson Keyes	Limestone
Walter Searing Knapp	Lee
Milton Lothrop, Jr.	Texas
William Carter Oliver	Texas
Parker Preston Powell	Choctaw
John Bean Poyner	Dale
Lindsey Irwin Wallin	Georgia
Albert Leon Young	Lamar
Isadore Zadek	Montgomery

CATALOGUE OF STUDENTS

FOR SESSION 1909-1910

GRADUATE STUDENTS.

Emmett Eason Binford	Lee
Ralph Upshaw Blasingame	Lee
Walter Stanley Childs	Georgia
Julian Jarnigan Culver	Lee
Gilbert Graffenreid Glover	Jefferson
Benjamin Edward Harris	Lee
Daniel Herren	Elmore
John Belton Hodges	Marion
Mary Katherine Hollifield	Lee
Edward William Lind	Jefferson
Herman Clarence Nixon	Calhoun
Josiah Whittaker Powell	Lowndes
Walker Reynolds	Calhoun
Leslie Warren Shook	Lee
James Grey Stelzenmuller	Baldwin
George Washington Taylor	Choctaw
Ernest Wood Thornton	Talladega
Alma Cole Tompkins	Arkansas

SENIOR CLASS.

Samuel Adler	Calhoun
Charles Robertson Allen	Georgia
James Jefferson Beaver	Walker
John Blake	Colbert
George Eason Blue	Montgomery
Douglas Gerald Boozer	Georgia
Ridgeway Smith Boyd	Coffee
Albert Cook Bryant	Wilcox
Sidney Marsh Bryant	Wilcox
Hugh Buchanan	Georgia
David Jasper Burleson	Marion
Alto Lee Byrd	Lee
Ralph Carlisle	Lee
Nash Sentell Carr	Tallapoosa
Charles Freeman Carter	Georgia
Eugene LaFayette Cathcart	Wilcox
Dudley Murfee Clements	Lee
Joseph Cohen	Tallapoosa

Benjamin Taylor Collier	Morgan
George Benjamin Collier	Pike
George Seymour Cooper	Calhoun
Edward Lane Davis	Mobile
Henry Howard Davis	Geneva
Lewis Manning Dinsmore	Morgan
Wiley Antony Downing	Escambia
Harry Thomas Edwards	Jefferson
Thomas Henry Edwards	Lee
Louis Breitenbach Ehrlich	Georgia
Harry Wright Esslinger	Madison
Whitley Lay Ewing	Etowah
William Thomas Ewing	Covington
Jefferson Cameron Falkner	Montgomery
Homer Quitman Gantt	Covington
William Walton Garrett, Jr.	Jefferson
James McAdory Gillespie, Jr.	Jefferson
Schley Gordy	Georgia
William Berry Griffin	Clay
Ernest Starr Hansberger	Jefferson
William Augustus Harman	Georgia
William Reese Harvey	Bibb
Loyd Jerome Hawley	Henry
Elmer Arthur Haynie	Lee
Asa G. Hubbard	Marshall
Talmage Coates Hughes	Etowah
James Parks Hutcheson	Tallapoosa
Charles Paul Illges	Russell
Robert Bellinger Janney	Walker
Covington Drane Jenkins	Georgia
Franklin Pollard Jones	Jefferson
Bertram Kaufman	Georgia
Lawrence Kelly	Montgomery
John Judson Keyes	Limestone
Edgar Love Kimbrough	Georgia
Leo Kling	Mobile
Walter Searing Knapp	Lee
Richard Isaac Lanier	Jefferson
Michael Jones Lingo	Henry
William Lee Lloyd	Macon
Milton Lothrop, Jr.	Texas
Joel Thaddeus McLemore, Jr.	Greene

Harry Clyde McNamara	Georgia
George Tilghman McWhorter, Jr.	Colbert
William Roberts Martin	Dale
Thomas Burton Meadows	Cullman
Benjamin Leopold Merkel	Talladega
Clarence Edward Mohns	Jefferson
Dennis Markette Moore	Georgia
Roy Worsham Moore	Georgia
John Charles Nickerson	Shelby
Arthur Sanford Noble, Jr.	Elmore
William Carter Oliver	Texas
George Roscoe Ozley	Shelby
George Horatio Packwood	Florida
James Arthur Parrish	Randolph
Wales McIntosh Perdue	Jefferson
John Haigler Phillips	Elmore
Howard Kennedy Porter	Georgia
Parker Preston Powell	Choctaw
John Bean Poyner	Dale
Osie Clyde Prather	Lee
James Freeland Reeves	Barbour
Bryant Richardson	Sumter
Jesse Blake Rutland	Chambers
McKee Brooks Scott	Tuscaloosa
George Frank Slaughter	Tallapoosa
James Carlisle Smith	Georgia
Malcolm Alexander Smith	Autauga
Charles Lewis Speake	Morgan
John Morris Spearman	Walker
Edwin Ray Stauffacher	Georgia
Thomas Neil Steagall	Henry
William Swart	Louisiana
Albert Hodges VanDuzer	Georgia
Willis Venable	Jefferson
John Edward Walker	Tallapoosa
Lindsey Irwin Wallin	Georgia
Richard Christopher Ward	Henry
William Riddle Ward, Jr.	Greene
Benjamin Weil	Jefferson
Austin Walker West	Georgia
Charles Bowden Wilhoite	Tennessee
John Price Williams	Marion

John Thomas Williamson	Cherokee
Joseph Kyle Woolfolk	Georgia
Chandler Cox Yonge	Florida
Albert Leon Young	Lamar
Isadore Zadek	Montgomery

JUNIOR CLASS.

William Wrenshall Alexander	Missouri
Burton Gray Allen	Marengo
Edward Shall Allen	Jefferson
Joseph Young Andrews	Lee
Riley Gilbert Arnold	Marion
Miles Augustus Askew	Marengo
William Edward Austin, Jr.	Georgia
Harvey Chesler Bates	Bullock
William Corrie Bibb	Dallas
James Thornton Bidgoood, Jr.	Mobile
James William Bivins, Jr.	Georgia
Leonard Maurice Blumenfeld	Lee
William Smith Bonner	Clay
William Wray Boyd	Lee
Cyril Macaulay Brennan	Georgia
James Ray Brooks	Crenshaw
Walker Edward Bryan	Marshall
Hancel William Caldwell	Lee
Milton Marion Cardwell	Marshall
John James Cater, Jr.	Georgia
Eugene Leon Caton	Covington
Robert Brounlee Centerfit	Montgomery
Robert Waddell Chapman	Montgomery
John Eugene Christopher	Limestone
Otis Gilmer Clements	Lee
Dabney Otis Collins	Hale
Walter McConnel Collins	Georgia
John Willoughby Crane	Jefferson
John Eayres Davis	Mobile
Henry Stephens Dumas	Georgia
Sam Worth Dupuy	Jefferson
Milner Hubbard Eskew	Dallas
Cedrio Errol Faber	Georgia
John Poston Figh	Montgomery
Benjamin Beall Fontaine	Lee
Joel Clarence Ford	Marion

Lewis Pritchett Fort	Dallas
Thomas Morris Francis	Calhoun
Luther D. Fuller	Montgomery
Thurston DuPuis Futch	Florida
Alton R. Gissendanner	Dale
L. Llewellyn Glover	Jefferson
Jesse Cleveland Good	Blount
Robert Knox Greene	Jefferson
William Davis Hall	Georgia
Arthur Finley Harper	Jefferson
E. O. Evans Harrell	Lee
*Albert Adkins Hedge	Mobile
James Lane Henderson	Jefferson
Stanton Silvian Hertz	Montgomery
Gordon Hicks	Tallapoosa
Walter Alexander Hicks	Tallapoosa
William Felix Hodges	Marion
Edgar Hodson	Limestone
Alonza Barber Hooper, Jr.	Marshall
Waldo Brashear Hooper	Marshall
John Ross Houser	Calhoun
Mary Alice Hudson	Lee
Joseph Proctor Huger	Calhoun
Sidney Sibley Jerdan	Franklin
John Stanley Jervis	Morgan
Harry McCrorie Johnstone	Jefferson
Max Kessler	Georgia
Christian Brower Ketcham, Jr.	Texas
John Russell Liddell, Jr.	Wilcox
Grafton Lothrop	Texas
Edgar Wood Lumpkin	Marshall
Alexander Aubrey Lyons	Montgomery
John Robert McCaghren	Jefferson
Earl Hill McCowen	Georgia
Howard Clifford McGregor	Jefferson
John Autrey McGuirk	Calhoun
William Alonza McIntosh	Tallapoosa
Robert James Malone	Jefferson
Joseph Amyle Marques	Mobile
Haskell Hair Martin	South Carolina
Thomas Jasper Miles	Montgomery

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*Not in full standing.

Albert Burton Moore	Fayette
Charles Moore	Bibb
Lawrence Sterne Morgan	Jefferson
Jemison Mims Moseley, Jr.	Dallas
William Francis Murphy	Henry
Clarence Thomas Nichols	Madison
Hugh O'Brien	Montgomery
Jack Lawrence Orr	Jefferson
William Malcolm Orum	Montgomery
Frank Lawrence Owsley	Elmore
Edmund Fay Pearce	Autauga
Harry Chester Powell	Calhoun
Saxon Pace Poyner	Dale
Joshua Stephens Pruitt	South Carolina
Van F. Pruitt	South Carolina
Edmond Urquhart Ragland	Montgomery
Robert Bruce Ragsdale	Jefferson
*Alfred Paul Ransom	South Carolina
Chauncey Lewis Rhodes	Marengo
Mac Trotter Robertson	Georgia
Frank Ross (Miss)	Lee
Mary Jane Ross	Lee
Lewis Arthur Scarbrough, Jr.	Georgia
Olin Herbert Sellers	Lee
Jesse Carmichael Simmons	Dale
Benjamin Woodruff Simon	Marengo
Joseph Bradford Simpson, Jr.	Jefferson
Percy McCall Smith	Jefferson
Orin Patrick South	Blount
Frederick Stewart	Bibb
Richard Anderson Stratford	Russell
Walter Strother	Tallapoosa
Thomas Wilburn Taunton	Chambers
Edwin Crawford Thomas	Chambers
Truman Aldrich Thomas	Jefferson
Otto Tidwell	Blount
Homer Bernard Tisdale	Conecuh
Benjamin Mills Washburn, Jr.	Montgomery
William Overton Winston	Sumter
Benjamin Allen Wooten, Jr.	Marengo
James Harrison Wright, Jr.	Calhoun

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*Not in full standing.

Robert Byrd Wright	Georgia
Thomas Parks Wright	Jefferson

SOPHOMORE CLASS.

Alfred Proctor Aldrich, Jr.	South Carolina
Walker Anderson, Jr.	Florida
Clarence Pax Andrew	Georgia
Malcolm Marion Argo	Macon
Preston Stoddard Avery	Florida
*Edwin Reese Baker	Lee
Douglas Thomas Beatty	Jefferson
William Curtis Bethea	Lee
*Russell Lee Beutell	Georgia
*Arthur Washington Billingsley	Clay
Bernard Deckard Boatright	Georgia
†Ernest Charles Boulineaux	Jefferson
Orsie Allan Bowen, Jr.	Georgia
Dallas Sidney Boyd	Lee
Arthur Dortch Bradfield	Georgia
Henry Irwin Brengle	Florida
George Allen Brewer	Tallapoosa
Henry Wells Brooks	Georgia
Roland Lee Brooks	Georgia
George Patrick Brown	Jefferson
Taylor George Burke	Montgomery
Peyton Bernard Burkhalter	Jefferson
Fleming Cayce Burns	Lauderdale
*William Henry Burnside	Georgia
*Winton Brasher Carleton	Washington
Joseph Emerson Carter	Georgia
Stuart Alexander Chamblin	Mobile
Charles Dean Chitty	Georgia
John Withers Clay, Jr.	Jefferson
William Thomas Clearman	Lamar
William Fred Cobb	St. Clair
Lloyd Denton Cole	Randolph
Wilbert Walton Cranford	Walker
Charles William Crumly	Jefferson
Samuel Ridgely Cruse	Madison
Frank Richard Curtis	Lee
Sidney Shaler Daniell	Georgia

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†Deceased.

*Not in full standing.

George Lawrence David	Sumter
Bunyan Davie, Jr.	Barbour
William Wilfred Davies	Jefferson
Augustus Baker Dean	Lee
Joseph Lowrie Dean, Jr.	Lee
Edward Alonzo Dillard	Lee
Thomas Floyd Drew	Georgia
John Heron Drewry	Barbour
Hugh Joseph Dudley	Russell
Nolan Lewis Dudley, Jr.	Georgia
Frances Camp Duggar	Lee
John Frederick Duggar, Jr.	Lee
Marion Earle England	Perry
Millard Woodfin Fendly	Blount
John Manly Flournoy	Georgia
Jessie Floyd	Lee
John Penick Fontaine	Marshall
Henry Wiley Grady	Chambers
Richard Vasser Gunter	Montgomery
Sam Cheatham Harrell	Lee
John Emmett Harris	Wilcox
Henry Lee Hattemer	Lowndes
Isham Stanton Hudmon	Lee
Robert Austin Jones	Montgomery
William Harold Joyner	Russell
Alfred O'Neal Keenan	Colbert
George Alston Kellum	Shelby
Joseph Ketzky	Montgomery
Harry Leo Kuchinski	Missouri
Winfield Scott Lampkin	Jefferson
Roy Miller Lilly	Georgia
Ernest Felix Lopez	Mexico
Julius Watkins McCall	Montgomery
Earle Alexander Major	Jefferson
William Charles Malone, Jr.	Talladega
Ernest Devon Manning	Covington
Homer Hosea Ballon Mask	Lee
Carl Edwin Melton	Georgia
Oleon Albert Miller	Jefferson
Lowe Morton	Georgia
Wallace Thurston Muir	Barbour
Dawson Hope Mullen	Morgan

James Kirk Newell	Tallapoosa
Arthur Bernhardt Newman	Madison
Willis Belmont Nickerson	Tallapoosa
*George Devotie Noble, Jr.	Montgomery
Woodfin Grady Page	Geneva
William Ware Palmer	Lee
John Woodfin Parkman	Houston
Roy Marion Perry	Montgomery
Hugh Pitard	Mobile
John Emmett Pitts	Russell
Samuel Rutherford Pitts, Jr.	Russell
Oscar Richardson Porter, Jr.	Butler
John Cunningham Postell, Jr.	Georgia
*Thomas Nimmons Powell	Georgia
William Roy Raney	Mobile
Alfred Wade Reynolds	Barbour
James Benagh Richardson	Limestone
Archibald Bradshaw Roberts	Barbour
Bonnie McCoy Roberts	Chilton
David Clare Rumph	Georgia
Charles Edward Sauls	Georgia
*Franz Paul Schone	Germany
Claude Winchester Shelverton	Georgia
Harry Lester Smith	Mobile
Harrell Walton Smith	Jefferson
Roger Downs Smith	Jefferson
Ralph Hugh Spencer	Texas
Gordon Hall Steele	Lee
Charles Stuart Stirling	Pickens
Hugh Platt Stith	Jefferson
Clifford Marvyn Stodghill	Randolph
John Bradley Streit	Jefferson
Cecil Baron Strobhar	Georgia
Riley Summers	Georgia
Eugene Frank Taber	Montgomery
Charles Coleman Thach, Jr.	Lee
William Heber Thames	Mississippi
Charles Numa Thibaut	Louisiana
Henry Stratford Thomas	Marengo
Robert Matthew Troy	Madison
George Reeves Vaughan, Jr.	Mobile

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*Not in full standing.

John Walden	Georgia
Thurman Cleveland Waller	Clarke
Joseph Ericson Webster	Georgia
William Collins White	Dekalb
Thomas Holmes Whitfield	Marengo
Hugh Hardy Williamson	Lowndes
John Williamson	Jefferson
Paul Bernard Williamson	Montgomery
Edwin Percy Winters	Jefferson
Charles Porter Wright	Lee

FRESHMAN CLASS.

Frederick Thompson Ambrose	Bibb
William Webster Bagley	Georgia
Homer Trusti Baker	Marshall
James Mathew Barr, Jr.	Barbour
Charles Homer Bennett	Randolph
*Joseph Robbins Bibb	Dallas
Julius Sylvester Blackburn	Lee
Wallace Comer Borland	Dale
*Leon Augustus Boyd, Jr.	Coffee
Oliver Percy Boykin	Mobile
Robert Lewis Bremer	South Carolina
Carl Brindley	Dekalb
David Mass Brown	Florida
Lamar Gayle Brown	Jefferson
*David Burchfield	Jefferson
Thomas William Bush	Georgia
Walker Glenn Carpenter	Georgia
Alder Frank Castagnoli	Bibb
Walter Payne Christian	Shelby
Robert Cyril Comer	Barbour
*Daniel Cook	Lee
Alexander Stephens Corgill	Marengo
William Pleasant Cowan	Calhoun
David Frank Crawford	Jefferson
Rufus Franklin Dail	Mississippi
Paul Mitchell Davenport	Georgia
Samuel Moore Dillard	Madison
Milton David Dreyfus	Jefferson
Coleman Ferrell Driver	Montgomery
Frank Judson Dudley, Jr.	Georgia

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*Not in full standing.

Paul Elliott Duke	Perry
Francis Earl Dunlap	Shelby
Harrol Franklin Downey	Jefferson
Claude Everett Edmiston	Florida
Samuel Carl Enslen	Jefferson
Charles A. Faulk	Barbour
*Calder Willingham Finney	Georgia
Henry Grady Floyd	Lee
Homer Glen Fuller	Washington
Julius Lamar Greene	Macon
Arthur Emory Gregory	Georgia
Hugh Carey Hanlin	Colbert
Charles Herndon Haralson	Georgia
Frank Augustus Hart	Montgomery
Oliver Linn Haynes	Jefferson
Thomas Guerdan Hearn	Macon
Herbert Henderson	Macon
Daniel Frank Hixon	Bullock
Walter Ray Hoffman	Lee
William Chesley Howton	Jefferson
John Matthews Jenks	Mississippi
Arlandus Leon Jerdan	Franklin
*Richard Griffin Key	Florida
Frank Floyd Kincey	Dallas
Frampton King	Florida
Joseph Edwin Lacey	Jefferson
William Harmong Lamar	Walker
Henry Augustus Lee	Georgia
William Edwards Lee	Houston
Robert Currie Lett	Lee
*Harold Lewis	Jefferson
*Frank Cary Lipscomb	Lee
William David Lockhart	Dallas
Clyde Augustus Lowry	Dallas
Jefferson McCord	Coosa
Clarke Berry McCormack	Jefferson
Rupert Alonzo McGinty	Jefferson
John Hearn McKnight	Jefferson
Terry McCall McPherson	Lee
Thomas Rex Matthews	Talladega
Jeffrey Emanuel Meyer	Dallas

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*Not in full standing.

Charles Benton Moore	Perry
Harry Lee Moore	Georgia
*William Gray Moore	Lee
Emery Tyler Motley	Randolph
Julien Coke Motley, Jr.	Jefferson
*J. C. Moxley	Crenshaw
Andrew Jackson Noble	Elmore
Duncan Nolan	Jefferson
William Calvern O'Neal	Covington
James Reagan Owen	Calhoun
Constantine Branse Palmer	Tennessee
*Lucien Key Palmer	Jefferson
John Bellinger Patrick	South Carolina
Morgan Milton Pearson	Randolph
E. R. Phillips, Jr.	Dale
*Frederick Eugene Pickett	Bullock
Joseph Neil Poole	Butler
Carl E. Pritchett	Clarke
Frederick Schweikert Rogers	Marengo
Charles Rudolph, Jr.	Mobile
Ransom Eugene Rutland	Chambers
Ernest William Sauer	Texas
J. Cleveland Seigler	Russell
Felix Jefferson Sellers	Montgomery
Hubert Sellers	Pike
Harry Crispe Sessions	Wilcox
Boyd Shaver	Montgomery
Guy Spearman	Walker
*DeForest Stewart	Cherokee
Robert Platt Stout	Montgomery
Robert Hardaway Strickland	Georgia
Philip Glen Sulsby	Greene
William Thomas Summers	Georgia
Derwood Lee Taylor	Lee
Brainier Thibaut	Louisiana
John Edward Thomas	Marion
Charles Llewellen Torbert	Chambers
*Kerner Holley Trent	Randolph
Ralph Tribble	Jefferson
Ellis DeWitt Turnham	Jefferson
David Alfred Vaughan, Jr.	Dallas

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*Not in full standing.

Glenn Connor Walker	Coosa
William Rush Walton	Louisiana
Adiel Ernest Ware	Georgia
James Sebastian Watts	Walker
Grady Michael Weaver	Calhoun
James Herbert White	Tallapoosa
Augustus Foscue Whitfield, Jr.	Marengo
Bryan Watkins Whitfield	Marengo
Van Winkle Wilkinson	Georgia
Charles Frank Williams	Lee
John Howard Wills	Lee
John Karl Wilson	Calhoun
*Wyatt Blake Wood	Randolph
Winston Theo Wood	Randolph
Julius Wilmot Wright, Jr.	Lee
Herschel Young	Lamar

SUB-FRESHMAN CLASS.

John Woods Alexander	Louisiana
Lawrence Cary Amos	Conecuh
Sidney Russell Amos	Conecuh
Samuel Faucett Anders	Tuscaloosa
James Edward Barnes, Jr.	Dale
Thomas Claude Batson	Jefferson
John Goodman Bethea	Conecuh
Charlie Glenn Borom	Russell
Thomas Cochran Bragg	Wilcox
Abbie William Brooks	Lee
Edward Broun	Washington
Otto Brown	Choctaw
Robert Lannton Cater	Georgia
Elbert R. Chandler	Marshall
Clarence Earl Chesnut	Cherokee
Alfred Seixas Clark	Mexico
Erskine Cunningham Cleere	Jefferson
Eugene Clifton	Bibb
George William Clover	Jefferson
Byron Wesley Coram	Georgia
Edward Luckie Cummings	Hale
Grady Lee Dabbs	Jefferson
Lewis Clifton Davis	Pickens
Edward Kelly Dial	Sumter
Robert Emmett Dixon	Sumter

Daniel Washington Duncan	Franklin
Henry Benton Dupree	Tallapoosa
William Elmir Edwards	Lee
Walter Carroll Ellis	Georgia
Hugh Eustace	Jackson
Oliver Ira Gaines	Jackson
Claud Gantt	Conecuh
John Franklin Gay, Jr.	Montgomery
Henry Homer Gossett	Georgia
Hugh Groover	Georgia
Perry Anderson Gwin	Tuscaloosa
Llewellyn Halsell	Sumter
William Dawson Haynes	Calhoun
Nolan Helms	Butler
Cornealious Wilson Hughes	Butler
Farish Humphryes	Tuscaloosa
Alexander Shepherd Jones	Georgia
James Clark Jones	Wilcox
William Henry Jordan	Washington
James Foy Lamar	Barbour
Jeff Levy	Jefferson
George Edward McGough	Montgomery
Joe Thomas McLean	Florida
Holt McLeod	Barbour
Robert Gibson McLester	Jefferson
Alfred Williams Marshall	South Carolina
John Pace Melton	Georgia
John Melville Miller	Walker
James Packer O'Bannon	Escambia
John Heard Patterson	Elmore
Lawrence Lee Perrin	Dallas
Feagin Rainer	Bullock
Insco Remington	Washington
Ales Everette Ridley	Georgia
Mosin Jones Roberson	Lawrence
Benjamin Hugh Sanford	Montgomery
William George Sherling	Jefferson
Thomas Shrader	Shelby
Clifford Alexander Singleton	Marengo
Henry Grady Smith	Perry
Herman Gray Speed	Sumter
Thomas James Stephenson	Dallas

Peter Melville Stewart	Jefferson
Clyde Quitman Tervin	Walker
James Henry Thigpen	Lowndes
Spencer Copland Mansfield Tunnell	Lauderdale
Guy Turner	Washington
Matthew Reid Wallis	Chambers
Maltie Winchester	Jefferson

Special and Irregular Students.

Vergil Pettus Atkinson	Limestone
Henry Jasper Banks	Georgia
Frank Henry Beaufort	Mobile
Andrew Jackson Bethea	Perry
Lee Irby Betty	Montgomery
Jeptha Hill Blake	Colbert
George Cain	Jefferson
William Wallace Caldwell	Lee
Frank Miller Coleman	Calhoun
Robert Francis Corneil	Mississippi
William Bailey Davidson, Jr.	Montgomery
Grover Davis	Calhoun
James Grover Davis	Lee
Durall Dobbins	Perry
Clarence Henry Dozier	Perry
Giles Hamilton Edwards	Jefferson
Thomas Pettengill Ewing	Etowah
Henry Grady Ezell	Tennessee
Robert Molton Falkner	Lee
Errol Foscue	Marengo
Hugh Friel, Jr.	Jefferson
Harold William Graham	Baldwin
John Benson Hastings, Jr.	Montgomery
James Murphree Haralson	Pike
Lewis Woodford Hardage	Morgan
Stephen Willis Harris	Madison
Ottis Bart Hayes	Shelby
Arthur Zellers Heard	Lee
Macy Frank Jones	Lee
Homer Walter Jones	Jefferson
William Lee Joseph	Montgomery
Claude Eugene Kimball	Mobile
Rufus Levi King	Houston
Chester Brannon Knapp	Lee

William Henry Lanford, Jr.	Arkansas
Thomas Courtenay Locke	Montgomery
Harry Foster Lowe, Jr.	Lee
James Webb McDonald, Jr.	Jefferson
George Tinsley McElderry, Jr.	Talladega
Arthur Rees McGarry	Lauderdale
Russell Edward Manes	Clarke
Robert Kerr Marsh	Jefferson
John David Means	Greene
Vicente L. Melo	Mexico
Lehman Knoor Merkel	Talladega
Americus Columbus Mitchell	Barbour
Lloyd Berrien Moore	Georgia
Oscar Claiborne Moorer	Conecuh
Herbert Nelson Moye	Georgia
William Neighbors	Coosa
Thomas DeLoach Nettles, Jr.	Mobile
Hubert Madison Norwood	Jefferson
Thomas Francis Parker, Jr.	Jefferson
Richard Kennon Perry	Bullock
Richard Alexander Polglaze	Tuscaloosa
Irby Rhenel Pollard	Crenshaw
Gordon Wheeler Proctor	Jackson
Ros Hine Richardson, Jr.	Limestone
Edmund Ross Riddle	Talladega
Alston Pickett Robinson	Lowndes
Cornelius C. Robinson	Lowndes
Chester W. Rogers	Washington
John Aduston Rogers, Jr.	Sumter
James Redman Rountree	Jefferson
Wodmansee Allen Roush	Georgia
Martin Judson Savelle	Mobile
Herold Joseph Schwab	Jefferson
Biscoe Seals	Jefferson
Young Shackelford	Montgomery
Eli Sims Shorter	Barbour
Henry Lee Smith	Dallas
William James Smith	Autauga
Ernest Henry Standifer	Tuscaloosa
George MacLeod Strader	South Carolina
Isaac LaPrade Stewart	Escambia
George Thomas Tate	Georgia

Ernest Chatterton Thomas	Lee
Henry Elias Thomas	Jefferson
Lloyd Oland Thornton	Clay
Henry Clay Turpin	Hale
Max Vines	Tallapoosa
James Cransby Waits	Covington
Charles Mattison Watkins	South Carolina
William Howard Webber	Montgomery
Henry William Weinhold	Texas
Walter John Whare	Jefferson
Newton Ridley Whitfield	Jefferson
Frances Augustus Williams, Jr.	Georgia
Stafford Smith Willis	Barbour
Willis Post Woodruff	Jefferson
William Franklin Young	Texas

DEPARTMENT OF PHARMACY.

FOUR-YEAR COURSE.

SENIOR CLASS.

George Benjamin Collier	Pike
James McAdory Gillespy, Jr.	Jefferson
Richard Isaac Lanier	Jefferson
McKee Brooks Scott, Jr.	Tuscaloosa

JUNIOR CLASS.

William Corrie Bibb	Dallas
Milner Hubbard Eskew	Dallas
Lewis Pritchett Fort	Dallas
James Taylor Jones	Montgomery
Jemison Mims Moseley, Jr.	Dallas
Walter Strother	Tallapoosa

SECOND YEAR.

Walter Alexander Brown, Jr.	Houston
William Howard Eiland	Montgomery
Grover Cleveland Kirkland	Escambia
John Ralph Lyon	Monroe
Joseph Wilkinson McNeel	Tuscaloosa
George Washington Penton	Coosa
Edward Fleming Smith	Covington
Joseph Jenkins Taylor	Washington
Daniel Harman Thweatt	Calhoun

TWO YEAR COURSE.

FIRST YEAR.

William Mitchell Avery	Randolph
James Hamilton Barr	Barbour
Geoffrey Alan Barton	Louisiana
Benjamin Leslie Howard Batte	Sumter
Lewis Dobbs Berkstresser	Tallapoosa
John Cunningham Dew	Perry
Ellis Hewitt Edwards, Jr.	Louisiana
James Howard Graves	Lee
Henry Lee Griggs	Montgomery
Erle Mortimer Hall	Lee
Louis Howle	Calhoun
James Louis Hughes	Jefferson
Eugene Preston Jones	Fayette
William Lucius Lamar	Macon
D. Levie	Coosa
Maury Alexander McWilliams	Autauga
Walter Claude Michael	Marengo
Thomas Jones Morrison	Lawrence
Benjamin Franklin Moseley	Clarke
Thomas Herbert Neighbors	Coosa
Wingate Posey Pickett	Bullock
Frederick Leigh Plaxco	Franklin
James Fletcher Posey	Calhoun
Lucy Caroline Richards	Bibb
Walton James Rogers	Sumter
William Erskine Skeggs	Morgan
Henry Grady Waddell	Marshall
Morrell Stanley Warren	Tallapoosa
Grady Webb	Lee
Fletcher Hargrove Whitley	Fayette
Luther Thurman Wilson	Hale

COLLEGE OF VETERINARY MEDICINE AND SURGERY.

Lewis Edgar Beckham	First Year	Hale
Arch Strickland Boyd	Second Year	Sumter
Sanford Nathan Bradshaw	Second Year	Jefferson
†Oscar Tucker Brantley	Second Year	Monroe
Harry Houston Breazeale	Second Year	Lauderdale
Dillard Oreen Browning	First Year	Montgomery
Berney Sumner Clay	First Year	Jefferson
Homer David Cogdell	Second Year	Bullock
George Lombart Dunaway	First Year	Clarke
Gussie Moore Hall	Second Year	Baldwin
Elam Tandy Hallman	Third Year	Talladega
Forrest Revell Harsh	Third Year	Jefferson
Samuel Duke Haynie	First Year	Lee
Armstrong Hill	Third Year	Talladega
William Madison Hobdy	Second Year	Baldwin
Jackson Gilbert Horning	First Year	Walker
William Lemuel Ingram	Third Year	Lee
Walter Herbert Lee	Third Year	Pike
George Washington Lewallen	Second Year	Jackson
James Madison Luke	First Year	Sumter
Curtis Logan McCoy	Second Year	Jefferson
John Perry Major	First Year	S. Carolina
Julian Curtis Meadows	First Year	Lee
Marion Elerson Meadows	First Year	Lee
Calloway Charles Middleton	Third Year	Lowndes
Benjamin Homer Moon	Second Year	Clay
Adolphus Moore	First Year	Perry
Barney Patrick Moran	Second Year	Jefferson
Robert Bascom Nixon	Second Year	Sumter
James Frederick Park	Second Year	Limestone
Guy Maxey Parrish	First Year	Lee
William Waller Parrish	First Year	Lee
Oscar Watson Payne	Second Year	Calhoun
Guy Julius Phelps	Second Year	Montgomery
Foster Byers Philips	Second Year	Etowah
John Adam Phillips	First Year	Jefferson
Fletcher Burnett Prestwood	First Year	Covington
John Thomas Prickett	Second Year	Talladega
Malcolm James Rattray	First Year	Cherokee
Claud William Marcelline Ressijac	First Year	Mobile

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† Deceased.

Warren Frank Ridley	First Year	Georgia
Bennett Thomas Simms	Second Year	Sumter
John Bowie Steadham	Second Year	Lee
Robert James Strickland	Third Year	Lowndes
William Lee Stroup	First Year	Morgan
Percy Hairston Sumner	Second Year	Greene
James Cleveland Webb	Second Year	Calhoun
Wilton Wendell Webb	Second Year	Lee
Fortescue Bryan Whitfield	Second Year	Marengo
Frank Perry Woolf	Third Year	Baldwin
Thomas Lee Wright	First Year	Lee

SUMMARY.

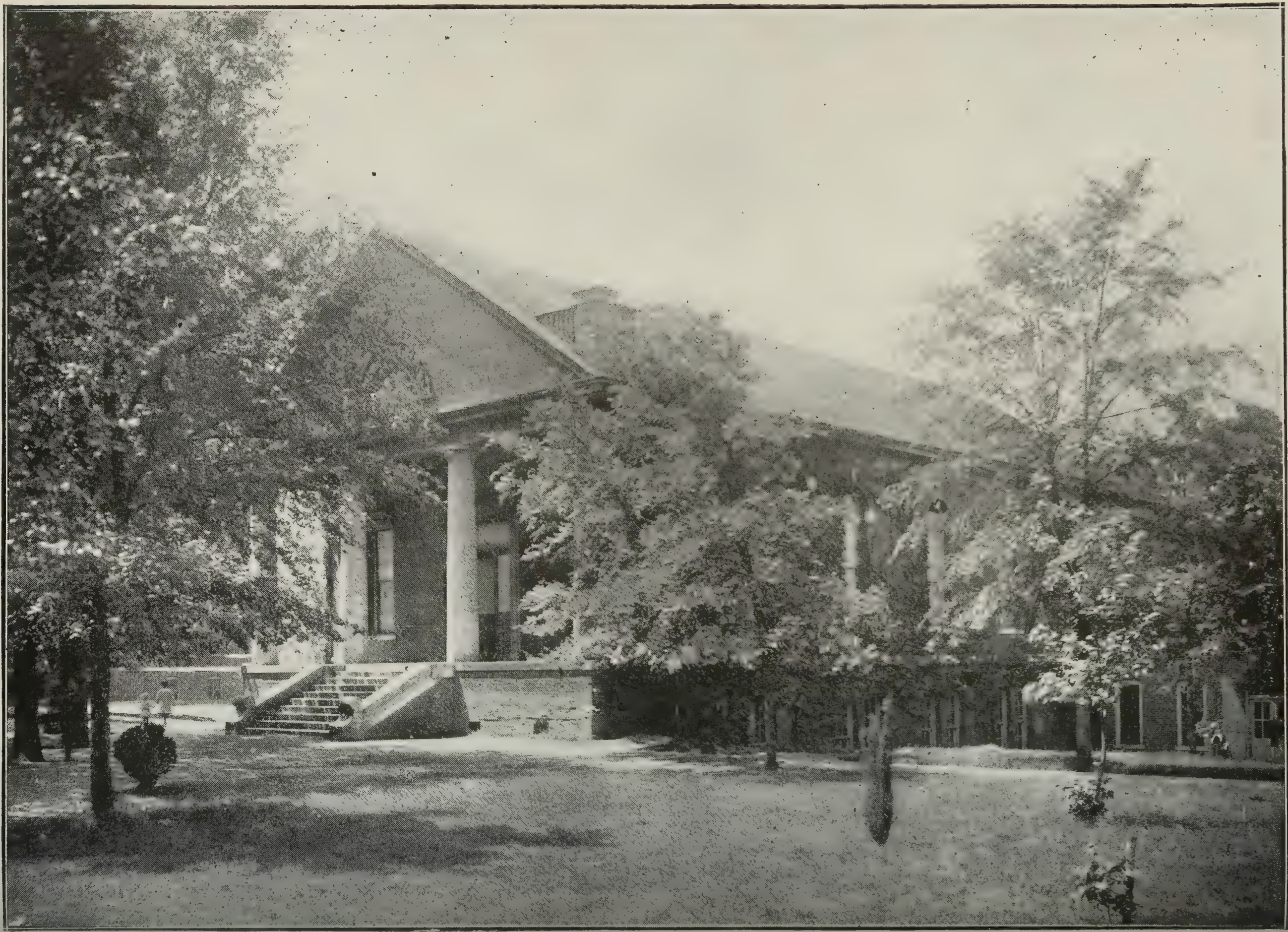
Graduate Students	18
Senior Class	107
Junior Class	120
Sophomore Class	130
Freshman Class	128
Special and Irregular Students	91
Sub-Freshman Class	74
Veterinary Medicine	51
Pharmacy	50
	769
Deduct for names counted twice	9
Total	760

NUMBER OF STUDENTS IN EACH SUBJECT OF STUDY.

English	570	Geology	63
History	368	Civil Engineering	54
French	59	Structural Design	34
German	67	Electrical Engineering	94
Latin	92	Mechanical Engineering	102
Mental Science	8	Mining Engineering	9
Political Economy	86	Architecture	20
Mathematics	532	Machine Design	94
Chemical Laboratory	137	Drawing	295
Chemistry	302	Descriptive Geometry	129
Agriculture	201	Mechanic Arts	368
Animal Industry	235	Mineralogy	21
Physics	414	Physiology	124
Botany	69	Veterinary Science	63
Zoology	5	Pharmacy	50
Horticulture	44	Veterinary Medicine	63
Forestry	18	Military Department	640
Landscape Gardening	13	Surveying	108

RESIDENCE BY STATES.

Alabama	619
Georgia	89
Florida	11
South Carolina	11
Texas	8
Louisiana	7
Mississippi	4
Tennessee	3
Arkansas	2
Missouri	2
Mexico	3
Germany	1
	760



MILITARY ORGANIZATION

FOR SESSION 1909-1910

President,
CHARLES C. THACH.

Commandant,
COL. BENJAMIN S. PATRICK.

Surgeon,
J. H. DRAKE.

Regimental Staff,

Cadet Captain D. M. Clements, Adjutant.
Cadet Captain J. P. Hutcheson, Quartermaster.
Cadet Lieutenant J. A. Parrish, Assistant Quartermaster.
Cadet Lieutenant J. T. Williamson, Commissary.

Regimental Non-Commissioned Staff.

Cadet Sergeant J. E. Davis, Sergeant Major.
Cadet Sergeant T. M. Francis, Quartermaster Sergeant.
Cadet Sergeant R. J. Malone, Color Sergeant.
Cadet Sergeant J. P. Huger, Drum Major.

First Battalion.

Cadet Major M. A. Smith.

Cadet Adjutant E. R. Stauffacher.	Cadet Sergeant Major E. F. Pearce,

Cadet Captains.

Company "A."	Company "B."	Company "C."	Company "G."
C. C. Yonge.	M. Lothrop.	A. L. Young.	J. M. Spearman.
Cadet First Lieutenants.			
W. T. Ewing,	H. H. Davis,	A. H. VanDuzer,	C. E. Mohns,
W. M. Perdue.	W. L. Ewing.	L. M. Dinsmore.	A. S. Noble.
Cadet Second Lieutenants.			
L. J. Hawley.	G. B. Collier.	B. Richardson,	L. B. Ehrlich.
Cadet First Sergeants.			
J. J. Cater	W. W. Alexander.	G. Lothrop.	J. M. Moseley.
Cadet Sergeants.			
B. A. Wooten,	E. H. McCowen,	W. W. Boyd,	L. P. Fort,
R. W. Chapman.	H. M. Johnstone,	J. W. Bivins,	T. J. Miles,
M. A. Askew,	J. A. McGuirk,	L. Blumenfeld,	J. L. Henderson,
J. T. Bidgood.	C. L. Rhodes.		P. M. Smith.
Cadet Corporals.			
D. C. Rumph,	C. E. Sauls,	W. B. Nickerson,	F. Curtis,
S. R. Cruse,	R. M. Lilley,	H. W. Grady,	S. C. Harrell,
J. B. Richardson,	T. G. Burke,	H. W. Brooks,	T. H. Whitfield,
W. H. Joyner,	P. S. Avery,	C. W. Shelverton,	T. F. Drew,
N. L. Dudley,	S. R. Pitts,	J. F. Duggar,	C. N. Thibaut,
M. M. Argo.	W. Anderson.	J. C. Postell.	A. B. Roberts.

Second Battalion.

Cadet Major W. C. Oliver.

Cadet Adjutant,
J. F. Reeves.

Cadet Sergeant Major
R. A. Stratford.

Cadet Captains.

Company "D."	Company "E."	Company "F."
R. S. Boyd.	E. L. Davis.	J. C. Smith.

Cadet First Lieutenants.

C. L. Speake,
R. M. Falkner,
W. A. Harman,
T. H. Edwards,
J. M. Gillespy,
R. B. Janney,

Cadet Second Lieutenants.

M. J. Lingo.
F. P. Jones.
A. C. Bryant,

Cadet First Sergeants.

R. K. Greene,
E. L. Caton,
L. D. Fuller,

Cadet Sergeants.

C. T. Nichols,
W. A. Hicks,
W. S. Bonner,
G. R. Hicks.
L. A. Scarbrough,
E. U. Ragland,
W. O. Winston,
E. Hodson.
W. D. Hall,
R. B. Centerfit,
R. B. Wright.

Cadet Corporals.

A. P. Aldrich,
E. D. Manning,
A. D. Bradfield,
S. S. Daniell,
R. Summers,
F. C. Burns.
C. P. Andrews,
H. G. Ezell,
A. B. Dean,
G. P. Brown,
R. V. Gunter,
C. B. Strobhar.
C. C. Thach, Jr.,
J. E. Pitts,
T. N. Powell,
R. H. Spencer,
W. G. Page,
R. D. Smith.

THE CADET BAND.

Session 1909-'10

A. L. THOMAS, Bandmaster.

H. C. McGregor, Assistant Bandmaster.

Military Officers.

Cadet Captain J. J. Keyes.
Cadet Lieutenant B. Weil.
Cadet Sergeants, O. G. Clements, J. P. Huger, J. R. Liddell.
Cadet Corporal C. P. Wright.
Cadet Sergeant J. P. Huger, Drum Major.

Musicians.

A. E. Barnes,
A. B. Brooks,
O. G. Clements,
B. T. Collier,
G. L. David,
B. Davie,
C. F. Driver,
E. S. Hansberger,
F. R. Harsh,
E. P. Jones,
A. O. Keenan,
J. J. Keyes,
J. R. Liddell,
A. W. Marshall,
J. P. Melton,
H. C. McGregor,
B. H. Mooon,
H. N. Moye,
S. P. Poyner,
M. T. Robertson,
J. B. Steadham,
J. B. Simpson,
E. C. Thomas,
B. Weil,
W. T. Wood,
C. P. Wright.

Cadets of the graduating class who were reported to the Adjutant General, U. S. Army, for publication in the "Official Army Register" as having ranked highest in the Military Department:

1889.
A. St. C. Dunstan,
B. H. Crenshaw,
A. J. Burr.

1890.
F. D. Milstead,
J. W. Bivins,
G. W. Emory.

1891.
L. E. Baker,
C. C. Johnson,
F. J. Bivins.

1892.
H. F. Dobbin,
A. L. Jones,
C. L. Brown.

1893.
Joel Dumas,
C. H. Smith,
J. F. Webb,

1894.
C. S. Andrews,
P. P. McKeown,
R. T. Dorsey.

1895.
S. L. Coleman,
H. H. Smith,
L. B. Gammon.

1896.
A. L. Alexander,
W. L. Fleming,
W. M. Williams.

1897.
P. G. Clark,
G. M. Holley,
G. N. Mitcham.

1898.
A. H. Clark,
A. McB. Ransom,
John Haralson.

1899.

I. F. McDonnell,
A. H. Feagin,
T. W. Wert.

1900.

E. M. Mason,
H. P. Powell,
C. W. Nixon.

1901.

A. F. Jackson,
J. D. Foy,
P. S. Haley.

1902.

W. D. Willis,
J. E. D. Yonge,
J. B. Garber.

1903.

H. E. Davis,
H. M. Yonge,
T. J. Dowdell.

1904.

J. McDuffie,
B. L. Shi,
George Dunglingson, Jr.

1905.

R. P. Boyd,
R. M. McCulloh, Jr.
J. H. Paterson.

1906.

W. H. Foy,
F. H. Mohns,
M. A. Frazer.

1907.

N. B. McLeod,
W. L. Perdue,
G. F. Lipscomb.

1908.

S. A. Ellsberry,
C. M. Howard,
R. H. Liddell.

1909.

J. W. Powell,
S. H. Richardson,
T. Beasley.

REQUIREMENTS FOR ADMISSION

All applicants for admission should present testimonials of good moral character, and those who come from other colleges must present certificates of honorable discharge.

To enter the freshman class the applicant must be not less than fifteen years of age, and should be qualified to pass a satisfactory examination on the following subjects:

1. Geography and History of the United States.

2. English—(a) English grammar and rhetoric as contained in any standard text. (b) An examination upon sentences containing incorrect English. (c) A composition giving evidence of satisfactory proficiency in spelling, punctuation, grammar and division into paragraphs.

(d) *Reading.* The composition of 1910 will be upon subjects drawn from one or more of the following works in English literature:

Group 1 (two books to be selected) Shakespeare: *As You Like It; Twelfth Night; Henry V.; Julius Caesar; Merchant of Venice.*

Group 2 (one book to be selected) Bacon: *Essays;* Bunyan: *The Pilgrim's Progress, Part I.; The Sir Roger de Coverly Papers in the Spectator;* Franklin: *Autobiography.*

Group 3 (one book to be selected) Chaucer: *Prologue;* Selections from *Spenser's Faerie Queene;* Pope: *The Rape of the Lock;* Goldsmith: *The Deserted Village;* Palgrave: *Golden Treasury* (first series), books II. and III., with especial attention to Dryden, Collins, Gray, Cowper, and Burns.

Group 4 (two books to be selected) Goldsmith: *The Vicar of Wakefield;* Scott: *Ivanhoe; Quentin Durward;* Hawthorne: *The House of the Seven Gables;* Thackeray: *Henry Esmond;* Mrs. Gaskell: *Cranford;* Dickens: *A Tale of Two Cities;* George Eliot: *Silas Marner;* Blackmore: *Lorna Doone.*

Group 5 (two books to be selected) Irving: *Sketch Book;* Lamb: *Essays of Elia;* De Quincey: *Joan of Arc* and *The English Mail Coach;* Carlyle: *Heroes* and *Hero Worship;* Emerson: *Essays* (selected); Ruskin: *Sesame* and *Lilies.*

Group 6 (two books to be selected) Coleridge: *The Ancient Mariner;* Scott: *The Lady of the Lake;* Byron: *Mazeppa* and *The Prisoner of Chillon;* Palgrave: *Golden Treasury* (first series), Book IV, with special attention to Wordsworth, Keats, and Shelley; Macaulay: *Lays of Ancient Rome;* Poe: *Poems;* Lowell: *The Vision of Sir Launfal;* Arnold: *Sohrab and Rustum;* Longfellow: *The Courtship of Miles Standish;* Tennyson: *Gareth and Lynette, Lancelot and Elaine,* and *The Passing of Arthur;* Browning: *Cavalier Tunes, The Lost Leader, How They Brought the Good News from Ghent to Aix, Evelyn Hope, Home Thoughts from Abroad, Home Thoughts from the Sea, Incident of the French Camp, The Boy and the Angel, One Word More, Herve Riel, Pheidippides.*

The candidates will be required to present evidence of a general knowledge of the subject matter, and to answer simple questions on the lives of the authors. This part of the examination is intended only to test a general knowledge of the substance of the books.

(e) *Study and Practice.* This part of the examination presupposes the thorough study of the style of the work, and will be upon the following: Shakespeare: *Macbeth;* Milton: *Lycidas, Comus, L'Allegro* and *Il Penseroso;* Burke: *Speech on Conciliation with America;* or Washington: *Farewell Address.* and Webster: *First Bunker Hill Oration;* Macaulay: *Life of Johnson;* or Carlyle: *Essay on Burns.*

Preparation and examination on these works will be necessary before the student is classed as regular in any course.

3. *Mathematics.* (a) Arithmetic, including fundamental operations; common and decimal fractions; denominate numbers; the metric system; percentage, including interest and discount; proportion. (b) Algebra to quadratic equations, as in Wentworth's Higher Algebra; especial preparation is urged in *fundamental operations, factoring, divisors, multiples,* and *fractions; a knowledge of synthetic division together with the Remainder Theorem and its applications will be required.* (c) Geometry, two books, including all original exercises.

4. Those applicants who desire to continue the study of Latin should be qualified to pass a satisfactory examination

in Latin grammar and the first two books of Caesar, in addition to the above subjects.

For admission to the higher classes, students should be prepared to stand satisfactory examination in all of the studies of the lower classes, as shown in the course of study. Students applying for admission to the sophomore class will be examined in mathematics through quadratic equations in algebra, and on all of geometry. Where opportunity has not been offered to pursue special studies required at this institution, the system of equivalents will be adopted, and studies which denote an equivalent amount of discipline and training will be accepted as satisfactory. But if not prepared to pass an examination in history and chemistry at the time of application, the applicant will be required before graduation to pass a satisfactory examination on these subjects.

It is absolutely essential that students who hope to succeed should be well grounded in arithmetic, algebra, and geometry.

A working knowledge of the metric system should also be obtained.

ADMISSION ON CERTIFICATE.

Applicants will be admitted without examination on presenting a certificate from any of the CERTIFICATE SCHOOLS named herein.

The following educational institutions having made application to be correlated to this college and having presented an approved course of study, are hereby declared to be CERTIFICATE SCHOOLS, and are granted the privilege set forth in the following:

"Students from certificate schools will be admitted to fresh-
"man class *without examination* upon the certificate of the presi-
"dent or principal, showing definitely that such students have
"completed satisfactorily all the studies required for admission, as
"stated in the catalogue, and are otherwise admissible."

The privilege of admitting students to the sophomore class on certificates will be granted only to those approved schools that previously had pupils admitted to that class without conditions.

The following form of certificate will be used:

I hereby certify that A.......... B.......... has attended the (*name the school or academy*) for ...... years, and has studied the following subjects:

in History ....(*name the books*)
in English ....(*name the books*)
in algebra ....(*state amount accomplished*)
in geometry ....(*state amount accomplished*)

in Latin .... (*state books read*) and having passed a satisfactory examination on these subjects, as required in the catalogue for admission to the .... class, he is recommended for the same.

Admission by certificate is regarded as provisional.

That is, though admitted to the class for which the certificate calls, the applicant may be required to take special examination in any subject in which his preparation proves unsatisfactory, or, after a fair trial, he may be dropped to a lower class, if he fails to maintain standing in the class to which he may be admitted.

CERTIFICATE SCHOOLS.

University Military School, Mobile	J. D. Wright
Verner Military Institute, Tuscaloosa	W. H. Verner
University School, Montgomery	J. M. Starke
Mt. Willing High School, Mt. Willing	J. W. Wray
State Normal School, Jacksonville	C. W. Daugette
Male Academy, Huntsville	————
Furman Academy, Livingston	L. A. Cockrell
High School, Opelika	I. W. Hill
Eighth District Agricultural School, Athens	J. M. Atkinson
The Hillsborough County High School, Florida	E. M. Hyde
Edgar's School for Boys, Montgomery	R. Bliss Edgar
Auburn Female Institute	W. F. Osburn
Seventh District Agricultural School, Albertville	J. B. Hobdy
Sixth District Agricultural School, Hamilton	H. O. Sargent
Eutaw Male Academy, Eutaw	H. C. Horton
Anniston Training School for Boys	W. A. White
Prattville Academy	————
Decatur City Schools	J. M. Collier
Dayton Academy	W. H. MacKellar
Georgia Military Academy	J. C. Woodward
Jasper Graded School	W. E. Turnipseed
Tuskegee High School	W. B. Riley
Mobile Military Institute	F. R. Peterson
University High School, Birmingham	I. J. White, M. B. Dickinson
Fourth District Agricultural School, Sylacauga	Geo. H. Thigpen
Gaylesville High School	John R. Ray
Oxford Graded Schools	John R. Bell
Carrollton (Ga.) Academy	————
Ninth District Agricultural School, Blountsville	E. A. Miller
Gadsden High School	W. E. Striplin
Boyd High School, Brundidge	B. H. Boyd
Eufaula High School	F. L. McCoy
Union Springs High School	W. R. Harrison
Montgomery High School	C. L. Floyd
Brighton Academy	C. C. Slaton
Southern Agricultural School, Abbeville	C. J. Owens
Barnes' School, Montgomery	E. R. Barnes
Jackson Agricultural School	W. F. Monk

Pensacola Classical School	H. C. Armstrong
Pratt City High School	P. M. McNeil
Berry School	———
Haleyville High School, Haleyville	—— Crowell
Pittsview Public School, Pittsview	J. L. Lucas
Roanoke Normal College, Roanoke	W. H. McDaniel
Butler's School, Huntsville	S. B. Butler
Cordova High School	Harmon

ADMISSION OF YOUNG WOMEN.

The privilege of becoming students in this institution is granted by the trustees to young women of mature mind and character on the following conditions:

The applicant must be seventeen years of age, and, if a candidate for a degree, be able to pass a satisfactory examination in each of the four subjects named below.

If the applicant is a candidate for admission as a special or irregular student, she must be able to pass a satisfactory examination in two of the subjects named, and may be admitted at an age less than seventeen, with a resident of Auburn acting as guardian, if application is approved by the faculty.

(a) In English—Proficiency in spelling and punctuation; grammar (Bartlett and McBain); rhetoric (Gardiner, Kittredge, and Arnold's Composition and rhetoric and Baldwin's Rhetoric; literature, (Page's Chief American Poets and Syle's From Milton to Tennyson.)

For requirements in reading in literature, see page 55.

(b) In history—Macy's Our Government; Chambers's History of the United States; Myers' General History.

(c) In Mathematics—Arithmetic, algebra, including quadratic equations, series, logarithms and the theory of equations, as in Wentworth's Higher Algebra; plane and solid geometry; all of plane trigonometry as in Wentworth.

(d) In Latin—Grammar, including the forms and syntax; Jones's Latin Prose Composition; translations of selections from Caesar, Nepos, Virgil, Cicero's Orations, Cicero's Letters, or the equivalent.

The equivalents of these subjects, as in above text-books, may be substituted.

When admitted, upon complying with the conditions above stated, the applicants may enter upon the study of any subject taught and join any class, for which, upon examination, they may be found qualified. The only condition imposed will be that they engage in earnest study, and attend the exercises regularly. They will board in town with private families, and attend college only at the hours of their exercises.

ENTRANCE EXAMINATIONS.

Entrance examinations will be held on Wednesday, the 7th of September, the day on which the session opens. Candidates will also be examined during the session, when application is made for admission.

The college has no sub-freshman class or preparatory department. Applicants for admission to the freshman class, if deficient on not more than two subjects, may, with the approval of the examining committee, and if sixteen years of age, be admitted without full standing on those subjects. In these cases, the students will be considered as on probation and will be expected to make up their deficiencies within a reasonable time.

Students, upon their arrival at Auburn, will report immediately to the president. No student will be admitted to a recitation in any class previous to matriculation.

NUMBER OF EXERCISES REQUIRED.

All students are required to have *not less than fifteen* recitations per week, or their equivalent, in addition to the exercises in laboratory work, drawing, and military drill. These additional exercises occupy not less than twelve hours per week, and in all give twenty-seven to thirty hours per week required in college exercises.

SPECIAL AND IRREGULAR STUDENTS.

The privilege of electing studies in the lower classes is not granted to young students nor to their parents.

The faculty will assign a student, on admission, to that class of a prescribed course for which he is qualified, and for special reasons, approved by the faculty, he may be permitted to become irregular.

Students qualified to prosecute the studies of the junior class, and those over twenty-one years of age that are not candidates for a degree, are permitted to take, with the advice of the faculty, the subjects of study for which they may on examination prove themselves qualified.

For an applicant to enter upon the study of civil, mining, electrical, or mechanical engineering as a special or irregular student he must have studied algebra through quadratics and logarithms, plane geometry, and plane trigonometry.

The professor in charge of a department will decide by examination whether a special student is prepared for admission to his class.

A student who does not take all the studies in a class of one of the degree courses, as prescribed in the catalogue, and is permitted to take an irregular course, will be assigned to a member of the faculty, who will act as his special adviser, and when his course of study has been approved by the faculty, no other change will be permitted without the endorsement of his adviser.

Regular students who fail to pass satisfactory final examinations in any one study become irregular students. They will be classed as regular students pursuing a course for a degree, whenever they can pass the examination in those subjects in which they were found deficient.

Students, candidates for a degree, who are not in full standing in all the prescribed studies of a class, rank in the military department with that class in which they have the greatest number of studies, and their names are so placed in the catalogue.

ADMISSION TO HIGHER CLASSES.

At the beginning of each term conditioned students may, on application approved by the faculty, be examined for admission to the freshman class in history, English, or mathematics, and be admitted to the freshman class in those subjects in which he passes a satisfactory examination.

Students who have completed satisfactorily all the studies of the sophomore class, as prescribed in the catalogue, in any one of the regular degree courses, can enter, without condition, the junior class in any course except the general course, and the course in pharmacy, in which Latin is required, and the course in agriculture, in which botany and physiology are required.

Students who are admitted to the junior class from other institutions, on examination in English, Latin, and mathematics, and who have not completed all the studies of the sophomore class, in order to graduate, will be required to complete the course in chemistry and history as taught in the sophomore class. In addition to these two subjects, students who thus enter the junior class of the course in agriculture, will be required to complete the course in botany and physiology in the sophomore class.

COURSES OF INSTRUCTION.

The courses of study include the physical, chemical, and natural sciences, with their applications; agriculture, biology; horticulture; mechanics, astronomy, mathematics; drawing; civil, electrical, mechanical, and mining engineering; architecture; physiology and veterinary science, pharmacy; English, French, German, and Latin languages; history, political economy; mental and moral sciences.

The studies are arranged in regular courses so as to offer liberal and practical education as a preparation for the active pursuits of life.

There are nine degree courses for undergraduates, each leading to the degree of Bachelor of Science (B. S.) and requiring four years for its completion.

I. COURSE IN CIVIL ENGINEERING.

II. COURSE IN ELECTRICAL ENGINEERING.

III. COURSE IN MECHANICAL ENGINEERING.

IV. COURSE IN MINING ENGINEERING.

V. COURSE IN ARCHITECTURE.

VI. COURSE IN CHEMISTRY AND METALLURGY.

VII. COURSE IN AGRICULTURE.

VIII. COURSE IN PHARMACY.

IX. GENERAL COURSE.

X. TWO-YEAR COURSE IN MECHANIC ARTS.

XI. TWO-YEAR COURSE IN AGRICULTURE.

XII. TWO-YEAR COURSE IN PHARMACY.

XIII. THREE-YEAR COURSE IN PHARMACY.

XIV. THREE-YEAR COURSE IN VETERINARY MEDICINE.

Course 1. includes the principles and applications of sciences that directly relate to civil engineering, and is adapted to those who expect to enter that profession.

Course II. includes, besides the general principles and applications of the sciences, a special course in the applications of electricity and mechanics, and is arranged to fit men for the profession of electrical engineering.

Course III. furnishes instruction in steam engineering, materials of construction, drawing, and machine design, electrical engineering, together with laboratory work. The course is intended to qualify men to fill positions in the manufacturing industries.

Course IV. includes theoretical and practical instruction in geology, mineralogy, chemistry, civil and electrical engineering, as applied to mines; mapping, exploration; boring; ventilation; timbering, and all the operations pertaining to the profession of mining engineering.

Course V. has been arranged to give a theoretical and practical knowledge of architecture in order to enable students to take advantage of office opportunities upon graduation. It embraces architectural drawing and design, history, and ornamental architectural engineering, and office practice.

Course VI. provides for thorough theoretical and practical instruction in pure and technical chemistry and metallurgy, and in the scientific branches relating thereto. Students taking this course also pursue the study of German or French during the junior and senior years, and are thus prepared to utilize for reference and for study scientific journals and works published in those languages.

Course VII. includes theoretical and practical instruction in those branches that relate to agriculture, horticulture, animal industry, botany and entomology, and is especially adapted to those who intend to devote themselves to agricultural and horticultural pursuits.

Course VIII. includes, besides the general education of Course VI. in the lower classes, a special course in pharmacy and chemistry, and is adapted to those who expect to become pharmacists, manufacturing chemists, or to enter upon the study of medicine.

Course IX. has been arranged to give a general and less technical education in subjects of science and language to meet the wants of those students who have selected no definite vocation in life, as well as those who intend ultimately to engage in teaching or in some commercial or professional business.

Courses X., XI., XII., XIII., and XIV., have been arranged for the benefit of those students who, for reasons satisfactory to themselves, are unable to continue at college four years and to take one of the regular degree courses. To enter these courses a student must be not less than seventeen years of age.

Special One-Year Course in Agriculture—Young men over twenty-one years of age who desire to study agriculture will be permitted, without examination, to enter any class under the professor of agriculture, and will be excused from reciting in any other class, from military duty, and from all other college duties; but will be under the general college regulations, and will be required to have their time fully occupied.

They may attend the lectures in agriculture in all the classes and engage in the practical work at the experiment station, in the field, stock-yard, dairy, garden, orchard, vineyard, etc., and may thus in one year acquire valuable practical knowledge of scientific agriculture.

A student who completes satisfactorily all the work of the senior class in a department, including the laboratory work, with approval of the faculty, may be awarded a certificate of proficiency in that subject.

Students who complete one of the two-year courses will, on passing a satisfactory examination, receive certificates indicating their attainments.

A student who completes the work of the two-year course in pharmacy and submits a satisfactory thesis will be granted the degree of Graduate in Pharmacy, (Ph. G.)

A student who completes the work of the three-year course in pharmacy and submits a satisfactory thesis will be granted the degree of Pharmaceutical Chemist, (Ph. C.)

A student who completes the work of the three-year course in veterinary medicine and submits a satisfactory thesis will be granted the degree of Doctor of Veterinary Medicine, (D. V. M.)

No degree or certificate of proficiency will be given in any course unless the applicant has passed a satisfactory examination in elementary English. Every candidate for a degree will be required to stand this special examination during the senior year.

Declamations and themes or orations are required of all regular students pursuing courses leading to a degree. For requirements, see Department of English.

GRADUATE COURSES.

A more extended graduate course of study may be taken by a graduate of this institution or of any college of equal grade. The completion of a course which leads to a post-graduate degree of Master of Science requires one year's residence, spent in the satisfactory prosecution of a course of study, with such laboratory work as may be approved by the faculty.

The candidate must also present to the faculty a satisfactory thesis showing independent investigation upon some subject pertaining to his course, and must pass an examination, at the close of each term, on the course of study prescribed, in which he must attain a grade of 75 per cent. The examination is written, and also oral in the presence of the faculty.

The subject for the thesis must be submitted to the faculty for approval prior to January 1st, and the thesis given to the professor of English by May 1st.

Applicants for a postgraduate degree and special students in post-senior studies are subject to the same general regulations as other students, and *pay the same fees;* but are exempt from all military duty.

The following courses are prescribed for the degree named:

1. *Master of Science.*—Studies in three departments, in two of which the candidate must have previously completed the full course of the senior class; or in special cases, with the approval of the faculty, a student may devote his full time to work in two departments, in each of which he has completed the full senior course.
2. *Master of Science in Pharmacy.*—Pharmacy and chemistry.

PROFESSIONAL DEGREES IN ENGINEERING.

The professional degree of Civil Engineer, Electrical Engineer, Mechanical Engineer, or Engineer of Mines will be conferred upon graduate students upon the satisfactory completion of the courses of study prescribed, a residence of one year at the Institute being required for the completion of these courses.

A written application stating the degree desired and the course of study selected must be submitted to the faculty at the beginning of the session. A satisfactory thesis must be completed and submitted by May 1st.

The above named professional degrees may be conferred upon graduates of the Alabama Polytechnic Institute in civil, electrical, mechanical, and mining engineering, *six* years after graduation, provided four years of the intervening time have been spent in the practice of that branch of engineering in which the candidate graduated, and an approved thesis is submitted to the faculty with a report of the character of the work done.

The above named proffessional degrees may be conferred *four* years after graduation upon a graduate who has spent the entire intervening time in the practice of that branch of engineering in which he graduated and has shown unusual aptitude for and ability in the practice of his profession. To obtain the degree upon these considerations he must have filled satisfactorily a responsible position in charge of important engineering work. As evidence of these facts, he must submit with his application written testimonials from his employers or clients, and an approved thesis shall be submitted.

Application for a degree must be filed not later than January 1, of the academic year.

The following courses of study are prescribed for the degrees named:

Civil Engineer. Civil engineering and any two subjects selected from the following: mathematics, analytical mechanics, mechanical engineering, electrical engineering, mining engineering, bacteriology.

Electrical Engineer. Electrical engineering and mechanical engineering; or electrical engineering, mathematics, and civil engineering.

Mechanical Engineer. Mechanical engineering and machine design; or mechanical engineering, mathematics, and mining engineering.

Engineer of Mines. Graduate students who have completed the course in mining engineering, including German, may apply for this degree. The subjects to be pursued are mining engineering, civil engineering, and one other technical subject related to mining and metallurgy, and approved by the faculty.

Special Students in Graduate Studies.—Students who are not graduates, but are qualified in special subjects to prosecute graduate studies, and desire to prepare themselves more thoroughly for professional or special work in any one of the departments of engineering, in chemistry, pharmacy, veterinary science, or other subjects in which instruction is given, may, when qualified, with approval of the faculty, enter this higher department of study and have all the privileges of postgraduate students.

A certificate of proficiency will be given when any one subject of a postgraduate course is satisfactorily completed.

Two degrees will not be given the same year.

LABORATORIES.

Laboratory instruction constitutes an important feature in the course of education provided for the students of this institute, and as far as possible all students are required to enter upon laboratory work in some one department.

Laboratory instruction and practical work are given in the following departments:

I. CIVIL ENGINEERING, FIELD WORK, SURVEYING, ETC.
II. ELECTRICAL ENGINEERING, TELEPHONE ENGINEERING.
III. MECHANICAL ENGINEERING.
IV. MINING ENGINEERING.

V. ARCHITECTURE.

VI. MECHANIC ARTS.

VII. TECHNICAL DRAWING.

VIII. PHYSICS.

IX. MINERALOGY.

X. ORE DRESSING.

XI. CHEMISTRY, METALLURGY.

XII. AGRICULTURE.

XIII. HORTICULTURE.

XIV. BOTANY, BIOLOGY.

XV. ANIMAL INDUSTRY.

XVI. PHARMACY, PHARMACEUTICAL CHEMISTRY.

XVII. VETERINARY SCIENCE, BACTERIOLOGY, PHYSIOLOGY.

XVIII. ENTOMOLOGY.

NOTE.—Special work in English or history may be taken by students in the general course as a substitute for laboratory work.

ORGANIZATION

The departments of instruction of the Institute have been arranged in four groups, known as the Academic College, the College of Engineering and Mines, the College of Agricultural Sciences, and the College of Veterinary Medicine and Surgery.

The Academic College offers one degree course in the general educational subjects and languages.

The College of Engineering and Mines offers degree courses in civil engineering, electrical engineering, mechanical engineering, mining engineering, and architecture.

The following courses of instruction are given in the College of Agricultural Sciences:

I. Four-year course in chemistry and metallurgy.
II. Four-year course in agriculture.
III. Four-year course in pharmacy.
IV. Three-year course in pharmacy.
V. Two-year course in pharmacy.
VI. Two-year course in agriculture.

The College of Veterinary Medicine and Surgery offers a three-year course leading to the degree of Doctor of Veterinary Medicine.

In accordance with the action of the Board of Trustees, the members of the instructional force are assigned to membership in the faculties of the four Colleges.

COURSES OF INSTRUCTION

ACADEMIC COLLEGE.

GENERAL COURSE.

FRESHMAN CLASS.

First Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 101a	2
	Academic 102a	3
History	Academic 201	2
Latin	Academic 209	4
Mathematics	Academic 401	3
	Academic 402	2
Drawing	Engineering 601	3
Mechanic Arts	Engineering 301	6
Military Drill	Academic 600	3

Second Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 101b	2
	Academic 102b	3
History	Academic 201	2
Latin	Academic 209	4
Mathematics	Academic 401	2
	Academic 402	3
Drawing	Engineering 601	3
Mechanic Arts	Engineering 302	6
Military Drill	Academic 600	3

Third Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 101b	2
	Academic 102b	3
History	Academic 201	3
Latin	Academic 209	3
Mathematics	Academic 401	2
	Academic 402	3
Drawing	Engineering 601	3
Agriculture	Agricultural 201	2
Mechanic Arts	Engineering 303	6
Military Drill	Academic 600	3

SOPHOMORE CLASS.

First Term.

Subject	*Number of Course*	*Hours per Week*
Latin	Academic 210	5
English	Academic 105	4
History	Academic 202	3
Mathematics	Academic 403	5
General Chemistry	Agricultural 101	4

Subject	*Number of Course*	*Hours per Week*
Drawing	Engineering 603	3
Mechanic Arts	Engineering 304	4
Military Drill	Academic 600	3

Second Term.

Latin	Academic 210	5
English	Academic 105	4
History	Academic 202	3
Mathematics	Academic 404	5
General Chemistry	Agricultural 101	4
Drawing	Engineering 603	3
Mechanic Arts	Engineering 305	4
Military Drill	Academic 600	3

Third Term.

Latin	Academic 210	5
English	Academic 105	4
History (x)	Academic 204	3
Mathematics	Academic 404 Academic 405	5 3
General Chemistry	Agricultural 101	4
Drawing	Engineering 603	3
Mechanic Arts	Engineering 305	4
Military Drill	Academic 600	3

(x) Botany, Agricultural 301, or Theoretical Mechanics, Academic 503, may be substituted.

JUNIOR CLASS.

First Term.

English	Academic 107	3
Latin	Academic 211	3
French	Academic 301a	4
German	Academic 305a	4
Mathematics	Academic 406	3
Physics	Academic 504	3
Military Tactics	Academic 601	1
History (a)	Academic 206	6
Military Drill	Academic 600	3

Second Term.

English	Academic 107	3
Latin	Academic 211	3
French	Academic 301b	3

Subject	*Number of Course*	*Hours per Week*
German	Academic 305b	3
Mathematics	Academic 406	3
Physics	Academic 504	3
Military Tactics	Academic 601	1
History (a)	Academic 206	6
Military Drill	Academic 600	3

Third Term.

English	Academic 107	3
Latin	Academic 211	3
French	Academic 301c	3
German	Academic 305c	4
Mathematics	Academic 406	3
Physics	Academic 504	3
Military Tactics	Academic 602	1
History (a)	Academic 206	6
Military Drill	Academic 600	3

(a) The student may substitute laboratory of any department of natural science for which he may be qualified.

SENIOR CLASS.

First Term.

English	Academic 108	2
Mental Science	Academic 111	2
Latin (x)	Academic 212	3
French	Academic 302a	4
German	Academic 306a	4
Geology	Engineering 403	2
Military Science	Academic 603	1
History (a)	Academic 206	6

Second Term.

English	Academic 108	2
Mental Science	Academic 111	2
Latin (x)	Academic 212	3
French	Academic 302b	4
German	Academic 306b	4
Geology	Engineering 403	2
Military Science	Academic 604	1
History (a)	Academic 206	6

Third Term.

Political Economy	Academic 112	2
Mental Science	Academic 111	2
Latin (x)	Academic 212	3
French	Academic 302c	4
German	Academic 306c	4
Geology	Engineering 403	2

Subject	*Number of Course*	*Hours per Week*
Astronomy	Academic 506	2
or Teachers' Physics	Academic 508	2
Military Science	Academic 605	1
History (a)	Academic 206	6

(x) English Constitutional History may be substituted.

(a) The student may substitute laboratory of any department of natural science for which he may be qualified.

COLLEGE OF ENGINEERING AND MINES.

(The following studies in the freshman and sophomore classes are prescribed in all of the departments of the College of Engineering and Mines.)

FRESHMAN CLASS.

First Term.

English	Academic 101a	2
	Academic 102a	3
History	Academic 201	2
Mathematics	Academic 401	3
	Academic 402	2
Elementary Physics	Academic 501	3
Drawing	Engineering 601	3
Mechanic Arts	Engineering 301	6
Military Drill	Academic 600	3

Second Term.

English	Academic 101b	2
	Academic 102b	3
History	Academic 201	2
Mathematics	Academic 401	2
	Academic 402	3
Elementary Physics	Academic 501	3
Drawing	Engineering 601	3
Mechanic Arts	Engineering 302	6
Military Drill	Academic 600	3

Third Term.

English	Academic 101b	2
	Academic 102b	3
History	Academic 201	3
Mathematics	Academic 401	2
	Academic 402	3
Agriculture	Agricultural 201	2
	Agricultural 801	
Drawing	Engineering 601	3
Mechanic Arts	Engineering 303	6
Military Drill	Academic 600	3

SOPHOMORE CLASS.

First Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 103a	3
History	Academic 202	3
Mathematics	Academic 403	5
General Chemistry	Agricultural 101	4
Descriptive Geometry	Engineering 602	3
Architectural Drawing (a)	Engineering 501	3
Drawing	Engineering 603	3
Mechanic Arts	Engineering 304	4
Physical Laboratory	Academic 502	2
Military Drill	Academic 600	3

Second Term.

English	Academic 103b	3
History	Academic 202	3
Mathematics	Academic 404	5
General Chemistry	Agricultural 101	4
Descriptive Geometry	Engineering 602	3
Architectural Drawing (a)	Engineering 501	3
Drawing	Engineering 603	3
Mechanic Arts	Engineering 305	4
Physical Laboratory	Academic 502	2
Military Drill	Academic 600	3

Third Term.

English	Academic 104	3
Elementary Mechanics	Academic 503	3
Mathematics	Academic 404	4
Surveying	Academic 405	3
Surveying (b)	Engineering 101	4
General Chemistry	Agricultural 101	4
Descriptive Geometry	Engineering 602	3
Architectural Drawing (a)	Engineering 501	3
Drawing	Engineering 603	3
Mechanic Arts	Engineering 305	4
Physical Laboratory	Academic 502	2
Military Drill	Academic 600	3

(a) Required of students who expect to take the course in architecture.

(b) Required of students who expect to take the course in civil engineering or in mining engineering.

Surveying, Engineering 102. For students who expect to take the course in civil engineering or in mining engineering. Sixty hours per week for four weeks immediately after commencement in summer surveying camp.

IN CIVIL ENGINEERING.

JUNIOR CLASS.

First Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 107	3
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Civil Engineering	Engineering 103	5
Structural Drafting	Engineering 107	5
Field and Office		6
Military Tactics	Academic 601	1
Machine Shop	Engineering 310	4
or Mineralogy	Engineering 402	4
Military Drill	Academic 600	3

Second Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 107	3
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Roads and Pavements	Engineering 104	5
Structural Drafting	Engineering 107	5
Field Work		6
Graphic Statics	Engineering 105	3
Machine Shop	Engineering 310	4
or Mineralogy	Engineering 402	4
Military Tactics	Academic 601	1
Military Drill	Academic 600	3

Third Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 107	3
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Mechanics of Materials	Engineering 106	5
Structural Drafting	Engineering 107	5
Field and Office		6
Machine Shop	Engineering 310	4
or Mineralogy	Engineering 310	4
Military Tactics	Academic 602	1
Military Drill	Academic 600	3

Surveying. Sixty hours per week for four weeks immediately after commencement in summer surveying camp.

SENIOR CLASS.

First Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 108	2
Mathematics	Academic 408	3
Physics	Academic 505	2
Geology	Engineering 403	2
Civil Engineering	Engineering 108	5
Structural Design	Engineering 113	5
Military Science	Academic 603	1
Field and Office		6

Second Term.

English	Academic 108	2
Mathematics	Academic 408	3
Physics	Academic 505	2
Geology	Engineering 403	2
Civil Engineering	Engineering 110	5
Structural Design	Engineering 113	5
Military Science	Academic 604	1
Mechanical Engineering Lab.	Engineering 319	4
Thesis	Engineering 114	6

Third Term.

Political Economy	Academic 112	2
Astronomy	Academic 506	2
Geology	Engineering 403	2
Sanitary Engineering	Engineering 111	5
Structural Design	Engineering 113	5
Military Science	Academic 605	1
Thesis	Engineering 114	6

IN ELECTRICAL ENGINEERING.

JUNIOR CLASS.

First Term.

English	Academic 107	3
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Electrical Engineering	Engineering 201	3
Electrical Measures	Engineering 205	1
Kinematics	Engineering 604	3
Machine Design	Engineering 606	4
Practical Mechanics	Engineering 308	1
Electrical Laboratory	Engineering 206	4
Shop Work	Engineering 309	6
Military Tactics	Academic 601	1
Military Drill	Academic 600	3

Second Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 107	3
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Electrical Engineering	Engineering 202	3
Electrical Measures	Engineering 205	1
Mechanics	Engineering 306	3
Machine Design	Engineering 606	4
Practical Mechanics	Engineering 308	1
Electrical Laboratory	Engineering 207	4
Shop Work	Engineering 309	6
Military Tactics	Academic 601	1
Military Drill	Academic 600	3

Third Term.

English	Academic 107	3
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Electrical Engineering	Engineering 203	3
Electrical Tests	Engineering 205	1
Strength of Materials	Engineering 307	3
Machine Design	Engineering 606	4
Practical Mechanics	Engineering 308	1
Electrical Laboratory	Engineering 208	4
Shop Work	Engineering 309	6
Military Tactics	Academic 602	1
Military Drill	Academic 600	3

SENIOR CLASS.

First Term.

English	Academic 108	2
Mathematics	Academic 408	3
Physics	Academic 505	2
Electrical Engineering	Engineering 210	5
Electrical Laboratory	Engineering 213	4
Electrical Designing	Engineering 221	2
Telephone Engineering	Engineering 216	2
Telephone Laboratory	Engineering 207	2
Steam Engines	Engineering 311	5
Mech. Engineering Laboratory	Engineering 318	4
Machine Design	Engineering 607	1
Machine Design	Engineering 609	3
Military Science	Academic 603	1

Second Term.

English	Academic 108	2
Mathematics	Academic 408	3
Physics	Academic 505	2

Subject	*Number of Course*	*Hours per Week*
Electrical Engineering	Engineering 211	5
Electrical Laboratory	Engineering 213	4
Electrical Designing	Engineering 221	2
Telephone Engineering	Engineering 216	2
Telephone Laboratory	Engineering 217	2
Thermodynamics	Engineering 312	5
Mech. Engineering Laboratory	Engineering 319	4
Machine Design	Engineering 607	1
Machine Design	Engineering 609	3
Military Science	Academic 604	1

Third Term.

Political Economy	Academic 112	2
Astronomy	Academic 506	2
Electrical Engineering	Engineering 212	5
Electric Engineering Laboratory	Engineering 213	4
Specifications and Contracts	Engineering 220	2
Electrical Designing	Engineering 221	2
Thermodynamics	Engineering 312	5
Mech. Engineering Laboratory	Engineering 320	4
Machine Design	Engineering 607	1
Machine Design	Engineering 609	3
Military Science	Academic 605	1

IN MECHANICAL ENGINEERING.

JUNIOR CLASS.

First Term.

English	Academic 107	3
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Kinematics	Engineering 604	3
Graphics of Mechanics	Engineering 605	1
Machine Design	Engineering 606	4
Electrical Engineering	Engineering 204	3
Electrical Engineering Lab'y	Engineering 206	4
Practical Mechanics	Engineering 308	1
Shop Work	Engineering 309	6
Military Tactics	Academic 601	1
Military Drill	Academic 600	3

Second Term.

English	Academic 107	3
Mathematics	Academic 406	3
	Academic 407	2
Kinematics	Engineering 604	3
Graphics of Mechanics	Engineering 605	1
Machine Design	Engineering 606	4

Subject	*Number of Course*	*Hours per Week*
Electrical Engineering	Engineering 204	3
Electrical Engineering Lab'y	Engineering 206	4
Practical Mechanics	Engineering 308	1
Shop Work	Engineering 309	6
Military Tactics	Academic 601	1
Military Drill	Academic 600	3

Third Term.

English	Academic 107	3
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Strength of Materials	Engineering 307	3
Graphics of Mechanics	Engineering 605	1
Machine Design	Engineering 606	4
Electrical Engineering	Engineering 204	3
Electrical Engineering Lab'y	Engineering 208	4
Practical Mechanics	Engineering 308	1
Shop Work	Engineering 309	6
Military Tactics	Academic 602	1
Military Drill	Academic 600	3

Summer course, Engineering 317. Taken immediately after commencement.

SENIOR CLASS.

First Term.

English	Academic 108	2
Mathematics	Academic 408	3
Physics	Academic 505	2
Electrical Engineering (a)	Engineering 219	2
Heating and Ventilation	Engineering 313	2
Mechanics of Materials	Engineering 315	3
Power Plant Engineering	Engineering 311	5
Machine Design	Engineering 607	1
Machine Design	Engineering 608	6
Electrical Engineering Lab'y	Engineering 220	4
Mech. Engineering Lab'y	Engineering 318	4
Military Science	Academic 603	1

Second Term.

English	Academic 108	2
Mathematics	Academic 408	3
Physics	Academic 505	2
Hydraulics	Engineering 110	5
Thermodynamics	Engineering 312	5
Gas Engines	Engineering 314	2
Machine Design	Engineering 607	1
Machine Design	Engineering 608	6
Mech. Engineering Lab'y	Engineering 319	4
Military Science	Academic 604	1

Third Term.

Subject	*Number of Course*	*Hours per Week*
Political Economy	Academic 112	2
Astronomy	Academic 506	2
Materials of Machines	Engineering 315	3
Thermodynamics	Engineering 312	5
Contracts and Specifications	Engineering 221	2
Machine Design	Engineering 607	1
Machine Design	Engineering 608	6
Mech. Engineering Lab'y	Engineering 320	4
Military Science	Academic 605	1

(a) Courses 108 and 109 in civil engineering may be substituted.

IN MINING ENGINEERING.

JUNIOR CLASS.

First Term.

English	Academic 107	3
Mathematics	Academic 406 Academic 407	3 2
Physics	Academic 504	3
Geology	Engineering 403	2
Drawing	Engineering 406	6
Surveying	Engineering 103	5
Laboratory Mineralogy	Engineering 401	4
Machine Shop	Engineering 310	4
Practical Mechanics	Engineering 308	1
Military Tactics	Academic 601	1
Military Drill	Academic 600	3
Field Work	Engineering 103	3

Second Term.

English	Academic 107	3
Mathematics	Academic 406 Academic 407	3 2
Physics	Academic 504	3
Mechanics	Engineering 308	3
Geology	Engineering 403	2
Drawing	Engineering 406	3
Mining Engineering	Engineering 404	5
Laboratory Mineralogy	Engineering 402	4
Machine Shop	Engineering 310	4
Practical Mechanics	Engineering 308	1
Military Tactics	Academic 601	1
Military Drill	Academic 600	3
Field Work	Engineering 103	3

Third Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 107	3
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Strength of Materials	Engineering 307	3
Geology	Engineering 403	2
Drawing	Engineering 406	3
Mining Engineering	Engineering 405	5
Laboratory Mineralogy	Engineering 402	4
Machine Shop	Engineering 310	4
Practical Mechanics	Engineering 308	1
Military Tactics	Academic 601	1
Military Drill	Academic 600	3
Field Work	Engineering 103	3

Summer course, Engineering 407. Taken immediately after commencement.

SENIOR CLASS.

First Term.

English	Academic 108	2
Mathematics	Academic 408	3
Physics	Academic 505	2
Geology	Engineering 408	2
Mining Engineering	Engineering 410	3
Electrical Engineering	Engineering 218	2
Metallurgy	Engineering 412	2
Drawing	Engineering 411	3
Military Science	Academic 603	1
Assaying	Agricultural 108c	8
Metallurgical Laboratory	Engineering 412	3

Second Term.

English	Academic 108	2
Mathematics	Academic 408	3
Physics	Academic 505	2
Hydraulics	Engineering 110	5
Mining Engineering	Engineering 410	3
Electrical Engineering	Engineering 218	2
Metallurgy	Engineering 412	2
Drawing	Engineering 411	3
Military Science	Academic 604	1
Assaying	Agricultural 108c	8
Metallurgical Laboratory	Engineering 412	3

Third Term.

Political Economy	Academic 112	2
Astronomy	Academic 506	2

Subject	Number of Course	Hours per Week
Geology	Engineering 409	2
Mining Engineering	Engineering 410	3
Electrical Engineering	Engineering 218	2
Metallurgy	Engineering 412	2
Drawing	Engineering 411	3
Military Science	Academic 605	1
Assaying	Agricultural 108c	8
Metallurgical Laboratory	Engineering 412	3

IN ARCHITECTURE.

JUNIOR CLASS.

First Term.

Subject	Number of Course	Hours per Week
French	Academic 301a	4
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Architectural Graphics	Engineering 508	4
Architectural History	Engineering 503	3
Theory of Architecture	Engineering 502	1
Drawing and Design	Engineering 504	10
Military Tactics	Academic 601	1
Military Drill	Academic 600	3

Second Term.

Subject	Number of Course	Hours per Week
French	Academic 301b	3
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Mechanics	Engineering 306	3
Architectural Graphics	Engineering 507	4
Architecture History	Engineering 503	3
Theory of Architecture	Engineering 502	1
Drawing and Design	Engineering 504	10
Military Tactics	Academic 601	1
Military Drill	Academic 600	3

Third Term.

Subject	Number of Course	Hours per Week
French	Academic 301c	3
Mathematics	Academic 406	3
	Academic 407	2
Physics	Academic 504	3
Architectural Graphics	Engineering 508	4
Architecture History	Engineering 503	3
Theory of Architecture	Engineering 502	1
Drawing and Design	Engineering 504	10
Military Tactics	Academic 601	1
Military Drill	Academic 600	3

SENIOR CLASS.

First Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 108	2
Mathematics	Academic 408	3
Physics	Academic 505	2
Architectural Engineering	Engineering 507	3
Specifications and Building Materials	Engineering 508	3
Architectural Drawing and Design	Engineering 506	16
Military Science	Academic 603	1

Second Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 108	2
Mathematics	Academic 408	3
Physics	Academic 505	2
Architectural Engineering	Engineering 507	3
Specifications and Building Materials	Engineering 508	3
Architectural Drawing and Design	Engineering 506	16
Military Science	Academic 604	1

Third Term.

Subject	*Number of Course*	*Hours per Week*
Political Economy	Academic 112	2
Physics	Academic 505	2
Architectural Engineering	Engineering 507	3
Specifications and Building Materials	Engineering 508	3
Architectural Drawing and Design	Engineering 506	16
Military Science	Academic 605	1

TWO-YEAR COURSE IN MECHANIC ARTS.

FIRST YEAR.

First Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 101a	2
	Academic 102a	3
History	Academic 201	2
Mathematics	Academic 401	3
	Academic 402	2
Elementary Physics	Academic 501	3
Drawing	Engineering 601	3
Shop Work	Engineering 301	6
Military Drill	Academic 600	3

Second Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 101b	2
	Academic 102b	3
History	Academic 201	2
Mathematics	Academic 401	3
	Academic 402	2
Agriculture	Agricultural 201	3
Drawing	Engineering 601	3
Shop Work	Engineering 302	6
Military Drill	Academic 600	3

Third Term.

English	Academic 101b	2
	Academic 102b	3
History	Academic 201	2
Mathematics	Academic 401	3
	Academic 402	2
Elementary Physics	Academic 501	2
Drawing	Engineering 601	3
Shop Work	Engineering 203	6
Military Drill	Academic 600	3

SECOND YEAR.

First Term.

English	Academic 103a	3
Mathematics	Academic 403	5
Physics	Academic 501	3
Drawing	Engineering 603	3
Shop Work	Engineering 304 and 309	12
Military Drill	Academic 600	3

Second Term.

English	Academic 103b	3
Mathematics	Academic 404	5
Physics	Academic 501	3
Drawing	Engineering 603	3
Shop Work	Engineering 305 and 309	12
Military Drill	Academic 600	3

Third Term.

English	Academic 104	3
Mathematics	Academic 404	5
	Academic 405	3
Physics	Academic 501	3
Drawing	Engineering 602	3
Shop Work	Engineering 305 and 309	12
Military Drill	Academic 600	3

COLLEGE OF AGRICULTURAL SCIENCES.

(The following studies in the freshman and sophomore classes are prescribed for the departments of the College of Agricultural Sciences.)

FRESHMAN CLASS.

First Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 101a*	2
	Academic 102a	3
History	Academic 201	2
Latin (a)	Academic 209	4
Mathematics	Academic 401	3
	Academic 402	2
Elementary Physics*	Academic 501	3
Drawing	Engineering 601	3
Mechanic Arts Laboratory	Engineering 301	6
Military Drill	Academic 600	3

Second Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 101b*	2
	Academic 102b	3
History	Academic 201	2
Latin (a)	Academic 209	4
Mathematics	Academic 401	2
	Academic 402	3
Elementary Physics*	Academic 501	3
Drawing	Engineering 601	3
Mechanic Arts Laboratory	Engineering 302	6
Military Drill	Academic 600	3

Third Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 101b*	2
	Academic 102b	3
History	Academic 201	3
Latin (a)	Academic 209	3
Mathematics	Academic 401	2
	Academic 402	3
Agriculture	Agricultural 801 Agricultural 201	2
Drawing	Engineering 601	3
Mechanic Arts Laboratory	Engineering 303	6
Military Drill	Academic 600	3

*Not required of students in pharmacy.

(a) Required of students who intend to elect the course in pharmacy.

SOPHOMORE CLASS.

First Term.

Subject	*Number of Course*	*Hours per Week*
English (a)	Academic 103a	3
Latin (b)	Academic 210	5
History	Academic 202	3
Mathematics	Academic 403	5
General Chemistry	Agricultural 101	4
Physiology	Veterinary 101	2
Animal Industry	Agricultural 802	2
Chemical Laboratory (c)	Agricultural 110a	6
Military Drill	Academic 600	3

Second Term.

English (a)	Academic 103b	3
Latin (b)	Academic 210	5
History	Academic 202	4
Mathematics	Academic 404	5
General Chemistry	Agricultural 101	4
Physiology	Agricultural 301	7
Animal Industry Laboratory	Agricultural 803	7
Agriculture	Agricultural 202	2
Chemical Laboratory (c)	Agricultural 110a	6
Military Drill	Academic 600	3

Third Term.

English (a)	Academic 104	3
Latin (b)	Academic 210	5
Mathematics	Academic 404	4
Surveying	Engineering 101	4
General Chemistry	Agricultural 101	4
Botany and Botany Lab'y	Agricultural 301	7
Physiology	Agricultural 501	2
Agriculture	Agricultural 203	4
Chemical Laboratory (c)	Agricultural 110a	6
Military Drill	Academic 600	3

(a) Latin may be substituted. This English is not required of students who expect to elect the course in pharmacy.

(b) Required of students who intend to elect the course in pharmacy.

(c) *Six* hours in chemical laboratory are required of those students who intend to elect the course in pharmacy.

IN CHEMISTRY AND METALLURGY.

JUNIOR CLASS.

First Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 107	3
Physics	Academic 504	3
Industrial Chemistry	Agricultural 102a	4
Organic Chemistry	Agricultural 103a	2
Mineralogy Laboratory	Engineering 401	4
Geology	Engineering 403	2
Military Science	Academic 601	1
Chemical Laboratory	Agricultural 110b	9
Military Drill	Academic 600	3

Second Term.

English	Academic 107	3
Physics	Academic 504	3
Industrial Chemistry	Agricultural 102a	4
Organic Chemistry	Agricultural 103a	2
Mineralogy Laboratory	Engineering 402	4
Geology	Engineering 403	2
Military Science	Academic 601	1
Chemical Laboratory	Agricultural 110b	9
Military Drill	Academic 600	3

Third Term.

English	Academic 107	3
Physics	Academic 504	3
Industrial Chemistry	Agricultural 102a	4
Organic Chemistry	Agricultural 103a	2
Mineralogy Laboratory	Engineering 402	4
Geology	Engineering 403	2
Military Science	Academic 602	1
Chemical Laboratory	Agricultural 110b	9
Military Drill	Academic 600	3

SENIOR CLASS.

First Term.

English	Academic 108	2
Physics (a)	Academic 505	2
French (b)	Academic 301a	4
Economic Geology	Engineering 408	2
Metallurgy	Agricultural 104	2
Engineering Chemistry	Agricultural 106	1
Theoretical Chemistry	Agricultural 107	2
Military Science	Academic 603	1
Chem. Lab'y and Assaying	Agricultural 110d	8
Metallurgical Designing or Metallurgical Laboratory		3

Second Term.

Subject	*Number of Course*	*Hours per Week*
English	Academic 108	2
Physics (a)	Academic 505	2
French (b)	Academic 301b	3
Economic Geology	Engineering 408	2
Metallurgy	Agricultural 104	2
Engineering Chemistry	Agricultural 106	1
Theoretical Chemistry	Agricultural 107	2
Military Science	Academic 604	1
Chem. Lab'y and Assaying	Agricultural 110d	8
Metallurgical Designing or Metallurgical Laboratory		3

Third Term.

Political Economy	Academic 112	2
Astronomy (a)	Academic 506	2
French (b)	Academic 301c	4
Economic Geology	Engineering 408	2
Metallurgy	Agricultural 104	2
Engineering Chemistry	Agricultural 106	1
Theoretical Chemistry	Agricultural 107	2
Military Science	Academic 605	1
Chem. Lab'y and Assaying	Agricultural 110d	8
Metallurgical Designing or Metallurgical Laboratory		3

(a) Or Physical Chemistry. (b) Or German.

IN AGRICULTURE.

JUNIOR CLASS.

First Term.

English (a)	Academic 107	3
Physics	Academic 504	3
Organic Chemistry	Agricultural 103b	2
Botany and Bot. Laboratory	Agricultural 302	6
Veterinary Science and Veterinary Laboratory (b)	Veterinary 102	5
Agriculture and Agricultural Laboratory (c)	Agricultural 204	4
Horticulture and Horticultural Laboratory (c)	Agricultural 601	6
Military Tactics	Academic 601	1
Military Drill	Academic 600	3

Second Term.

Subject	*Number of Course*	*Hours per Week*
English (a)	Academic 107	3
Physics	Academic 504	3
Agricultural Chemistry	Agricultural 105	3
Botany and Bot. Laboratory	Agricultural 302	6
Veterinary Science and Vet. Laboratory (b)	Veterinary 102	5
Animal Industry and Animal Industry Laboratory (c)	Agricultural 804	4
Horticulture and Horticultural Lab'y (c)	Agricultural 602	6
Military Tactics	Academic 601	1
Military Drill	Academic 600	3

Third Term.

English (a)	Academic 107	3
Physics	Academic 504	3
Agricultural Chemistry	Agricultural 105	3
Botany and Bot. Laboratory	Agricultural 302	6
Veterinary Science and Vet. Laboratory (b)	Veterinary 102	5
Animal Industry and Animal Industry Laboratory (c)	Agricultural 804	6
Agriculture and Agricultural Laboratory (c)	Agricultural 205	4
Military Tactics	Academic 602	1
Military Drill	Academic 600	3

(a), (b) French, German or Latin may be substituted.

(c) Six hours of chemical laboratory, Agricultural 110b, may be substituted.

SENIOR CLASS.

The studies of the course in agriculture are divided into five groups, as follows:

Group "A", agriculture: Gives special prominence to crops, soils, and farm machinery.

Group "B", horticulture: Gives special reference to fruit growing, trucking, and landscape gardening.

Group "C", animal industry: Gives special prominence to all work pertaining to live stock.

Group "D", agricultural chemistry: Especially designed to prepare students for experiment station and fertilizer control work.

Group "E", botany: Designed to train students for station work or to pursue advanced work in botany.

The elective work in each group must be approved at the beginning of the senior year by the president and the professor in charge, and with the required work must aggregate at least twenty-one hours counting two hours laboratory equal to one hour.

The giving of an elective course will be optional with the professor in charge unless it be elected by at least four students.

GROUP "A", AGRICULTURE.

First Term.

Subject	*Number of Course*	*Hours per Week*
Agriculture and Agricultural Laboratory	Agricultural 206	4
Entomology and Entomology Laboratory	Agricultural 701, 702	5
Geology	Engineering 403	2
Military Science	Academic 603	1
German (a)	Academic 305a	4
Thesis	Agricultural 209	2

Second Term.

Agriculture and Agricultural Laboratory	Agricultural 212	4
Forestry and Forestry Lab'y	Agricultural 608	5
Geology	Engineering 403	2
Military Science	Academic 604	1
German (a)	Academic 305b	3
Thesis	Agricultural 209	2

Third Term.

Agriculture and Agricultural Laboratory	Agricultural 208	4
Entomology and Entomology Laboratory	Agricultural 703, 704	5
Geology	Engineering 403	2
Military Science	Academic 605	1
German (a)	Academic 305c	4
Thesis	Agricultural 209	2

(a) French may be substituted.

Electives. The equivalent of at least seven hours from the following subjects:

First Term.

Farm Machinery and Farm Laboratory	Agricultural 210	5
Animal Industry and Animal Industry Laboratory	Agricultural	4
Horticulture and Horticultural Laboratory	Agricultural 603	5
Botany and Botany Laboratory	Agricultural 305	6
Veterinary Science and Veterinary Laboratory	Veterinary 102	5
Industrial Chemistry	Agricultural 102a	3
Organic Chemistry	Agricultural 103a	2
French	Academic 302a	4
Physics and Astronomy	Academic 505-6	2
Chemical Laboratory	Agricultural 110	6

Second Term.

Subject	*Number of Course*	*Hours per Week*
Soils and Soils Laboratory	Agricultural 211	5
Animal Industry and Animal Industry Laboratory	Agricultural 30	4
Horticulture	Agricultural 604	3
Horticultural Laboratory	Agricultural 607	4
Botany and Botany Lab'y	Agricultural 306	6
Veterinary Science and Veterinary Laboratory	Veterinary 102	5
Industrial Chemistry	Agricultural 102a	3
Organic Chemistry	Agricultural 103a	2
French	Academic 302b	4
Chemical Laboratory	Agricultural 110	6

Third Term.

Soils and Soils Laboratory	Agricultural 211	5
Animal Industry and Animal Industry Laboratory	Agricultural	4
Horticulture	Agricultural 605	3
Horticultural Laboratory	Agricultural 606	4
Botany and Botany Lab'y	Agricultural 307	6
Veterinary Science and Veterinary Laboratory	Veterinary 102	5
Industrial Chemistry	Agricultural 102a	3
Organic Chemistry	Agricultural 103a	2
French	Academic 302c	4
Chemical Laboratory	Academic 110	6

GROUP "B", HORTICULTURE.

First Term.

Horticulture	Agricultural 603	3
Horticultural Laboratory	Agricultural 603	4
Entomology and Entomology Laboratory	Agricultural 701, 702	5
Geology	Engineering 403	2
Military Science	Academic 603	1
German (a)	Academic 306a	4
Thesis	Agricultural 609	2

Second Term.

Horticulture	Agricultural 604	3
Horticultural Laboratory	Agricultural 607	4
Forestry and Forestry Laboratory	Agricultural 608	5
Geology	Engineering 403	2
Military Science	Academic 604	1
German (a)	Academic 306b	4
Thesis	Agricultural 609	2

Third Term.

Subject	*Number of Course*	*Hours per Week*
Horticulture	Agricultural 605	3
Horticultural Laboratory	Agricultural 606	4
Entomology and Entomology Laboratory	Agricultural 703, 704	5
Geology	Engineering 403	2
Military Science	Academic 605	1
German (a)	Academic 306c	4
Thesis	Agricultural 609	2

Electives. The equivalent of at least five hours from the subjects as listed under Group "A."

(a) French or English and Political Economy and one additional subject may be substituted.

GROUP "C", ANIMAL INDUSTRY.

First Term.

Animal Industry	Agricultural 807	2
Animal Industry Laboratory	Agricultural 809	4
Entomology and Entomology Laboratory	Agricultural 701, 702	5
Geology	Engineering 403	2
Military Science	Academic 603	1
German (a)	Academic 306a	4
Thesis		

Second Term.

Animal Industry	Agricultural 806	2
Animal Industry Laboratory	Agricultural 808	4
Forestry (b)	Agricultural 608	3
Geology	Engineering 403	2
Military Science	Academic 604	1
German (a)	Academic 306b	4
Thesis		

Third Term.

Animal Industry	Agricultural	2
Animal Industry Laboratory	Agricultural	4
Entomology and Entomology Laboratory	Agricultural 703, 704	5
Geology	Engineering 403	2
Military Science	Academic 605	1
German (a)	Academic 306c	4
Thesis		

Electives. The equivalent of at least six hours from the subjects listed under Group "A", or the Third Year Course in Veterinary Medicine.

(a) French may be substituted.

(b) Meat and milk inspection may be substituted.

GROUP "D", AGRICULTURAL CHEMISTRY.

First Term.

Subject	*Number of Course*	*Hours per Week*
Chemical Laboratory	Agricultural 110	6
Entomology	Agricultural 701, 702	5
Geology	Engineering 403	2
Military Science	Academic 603	1
German (a)	Academic 306a	4

Second Term.

Chemical Laboratory	Agricultural 110	6
Forestry and Forestry Lab'y	Agricultural 608	5
Geology	Engineering 403	2
Military Science	Academic 604	1
German (a)	Academic 306b	4

Third Term.

Chemical Laboratory	Agricultural 110	6
Entomology	Agricultural 703, 704	5
Geology	Engineering 403	2
Military Science	Academic 605	1
German (a)	Academic 306c	4

Electives. The equivalent of at least seven hours from the subjects as listed under Group "A."

(a) French may be substituted.

GROUP "E", BOTANY.

First Term.

German (a)	Academic 306a	4
Geology	Engineering 403	2
Organic Chemistry	Agricultural 103a	2
Botany and Botany Lab'y	Agricultural 305	6
Military Science	Academic 603	1
Thesis		

Second Term.

German (a)	Academic 306b	4
Geology	Engineering 403	2
Organic Chemistry	Agricultural 103a	2
Botany and Botany Lab'y	Agricultural 306	6
Military Science	Academic 604	1
Thesis		

Third Term.

German (a)	Academic 306c	4
Geology	Engineering 403	2

Subject	*Number of Course*	*Hours per Week*
Organic Chemistry	Agricultural 103a	2
Botany and Botany Lab'y	Agricultural 307	6
Military Science	Academic 605	1
Thesis		

Electives. The equivalent of at least three hours from the subjects as listed under Group "A."

(a) French may be substituted.

TWO-YEAR COURSE IN AGRICULTURE.

First Year.

First Term.

Dairying	Agricultural 802	2
Veterinary Science	Veterinary 102	5
Chemistry	Agricultural 101	3
English	Academic 101a	3
Physiology	Agricultural 501	2
Livestock Management	Agricultural 810	2
Butter Making and Milk Testing	Agricultural 802	4
Chemical Laboratory	Agricultural 110a	2
Mechanic Arts	Engineering 301	6
Military Drill (a)	Academic 600	3

Second Term.

Soils and Cultivation	Agricultural 202	2
Veterinary Science	Veterinary 102	5
Chemistry	Agricultural 101	3
English	Academic 101b	3
Physiology	Agricultural 501	2
Stock Feeding	Agricultural 804	2
Judging Livestock	Agricultural 803	4
Chemical Laboratory	Agricultural 110a	2
Mechanic Arts and Farm Machinery	Agricultural 210 Engineering 302	6
Military Drill (a)	Academic 600	3

Third Term.

Forage Plants	Agricultural 205	2
Veterinary Science	Veterinary 102	5
Chemistry	Agricultural 101	3
English	Academic 101b	3
Physiology	Agricultural 501	2
Breeds of Livestock	Agricultural 801	2
Botany and Botany Lab'y	Agricultural 301	7
Farm Practice	Agricultural 203, 204	4

Subject	*Number of Course*	*Hours per Week*
Chemical Laboratory	Agricultural 110a	2
Military Drill (a)	Academic 600	3

(a) Special agricultural students who are of age are excused from drill.

NOTE.—In case students in agriculture have conflicts in schedule, satisfactory substitutes will be accepted.

SECOND YEAR.

First Term.

Cotton Culture and Grading	Agricultural 206	2
Animal Breeding	Agricultural 806	2
Veterinary Science	Veterinary 102	5
Insects	Agricultural 701, 702	3
Agricultural Chemistry	Agricultural 105	3
Botany and Botany Laboratory	Agricultural 302	6
Corn	Agricultural 204	2
Cotton	Agricultural 206	4
Chemical Laboratory	Agricultural 110b	6

Second Term.

Miscellaneous Farm Crops	Agricultural 212	2
Stock Feeding	Agricultural 804	2
Veterinary Science	Veterinary 102	5
Fruit Growing	Agricultural 602	3
Agricultural Chemistry	Agricultural 105	3
Plant Breeding	Agricultural 302	6
Chemical Laboratory	Agricultural 110b	6
Horticultural Laboratory	Agricultural 607	4

Third Term.

Farm Management	Agricultural 208	2
Bacteriology	Veterinary 108	6
Vegetable Gardening	Agricultural 604	6
Industrial Chemistry	Agricultural 102	3
Diseases of Plants	Agricultural 302	6
Chemical Laboratory	Agricultural 110b	6
Horticultural Laboratory	Agricultural 606	4

IN PHARMACY.

JUNIOR CLASS.

First Term.

English (a)	Academic 107	3
Physics	Academic 504	3
Botany and Botany Lab'y	Agricultural 303	5

Subject	*Number of Course*	*Hours per Week*
Pharmacy	Agricultural 401a	3
Pharmaceutical Laboratory	Agricultural 401b	3
Pharmacognosy	Agricultural 402	4
Chemical Laboratory	Agricultural 110b	6
Military Tactics	Academic 601	1
Military Drill	Academic 600	3

Second Term.

English (a)	Academic 107	3
Physics	Academic 504	3
Botany and Botany Lab'y	Agricultural 303	5
Pharmacy	Agricultural 401a	3
Pharmaceutical Laboratory	Agricultural 401b	6
Pharmacognosy	Agricultural 402	4
Chemical Laboratory	Agricultural 110a	6
Military Tactics	Academic 601	1
Military Drill	Academic 600	3

Third Term.

English (a)	Academic 107	3
Physics	Academic 504	3
Botany and Botany Lab'y	Agricultural 303	5
Pharmacy	Agricultural 401a	3
Pharmaceutical Laboratory	Agricultural 401b	6
Pharmacognosy	Agricultural 402	4
Chemical Laboratory	Agricultural 110a	6
Military Tactics	Academic 602	1
Military Drill	Academic 600	3

(a) French or German may be substituted.

SENIOR CLASS.

First Term.

Bacteriology and Bacteriology Laboratory	Veterinary 108	6
Organic Chemistry	Agricultural 103a	2
Pharmacy	Agricultural 403a	5
Prescriptions	Agricultural 404	4
Military Science	Academic 603	1
Chemical Laboratory	Agricultural 110c	6
Pharmaceutical Laboratory	Agricultural 403b	15

Second Term.

Bacteriology and Bacteriology Laboratory	Veterinary 108	6
Organic Chemistry	Agricultural 103a	2
Pharmacy	Agricultural 403a	5
Prescriptions	Agricultural 404	4
Military Science	Academic 604	1
Chemical Laboratory	Agricultural 110e	6
Pharmaceutical Laboratory	Agricultural 403b	15

Third Term.

Subject	*Number of Course*	*Hours per Week*
Therapeutics	Veterinary 120	3
Organic Chemistry	Agricultural 103a	2
Pharmacy	Agricultural 403a	5
Prescriptions	Agricultural 404	4
Military Science	Academic 605	1
Toxicology	Agricultural 110e	6
Urinalysis	Veterinary 117	3
Pharmaceutical Laboratory	Agricultural 403b	15

TWO-YEAR COURSE IN PHARMACY.

FIRST YEAR.

First Term.

English	Academic 101a	3
General Chemistry	Agricultural 101	4
Physiology	Veterinary 101	2
Pharmacy	Agricultural 401a	3
Pharmacognosy	Agricultural 402	4
Chemical Laboratory	Agricultural 110a,b	8
Pharmaceutical Laboratory	Agricultural 401b	6
Military Drill	Academic 600	3

Second Term.

English	Academic 102b	3
General Chemistry	Agricultural 101	4
Physiology	Veterinary 101	2
Pharmacy	Agricultural 401a	3
Pharmacognosy	Agricultural 402	4
Chemical Laboratory	Agricultural 110a,b	8
Pharmaceutical Laboratory	Agricultural 401b	6
Military Drill	Academic 600	3

Third Term.

Botany and Botanical Lab'y	Agricultural 301	7
General Chemistry	Agricultural 101	4
Physiology	Veterinary 101	2
Pharmacy	Agricultural 401a	3
Pharmacognosy	Agricultural 402	4
Chemical Laboratory	Agricultural 110a,b	8
Pharmaceutical Laboratory	Agricultural 401b	6
Military Drill	Academic 600	3

SECOND YEAR.

First Term.

Pharmacy	Agricultural 403a	5
Prescriptions	Agricultural 404	3
Pharmaceutical Laboratory	Agricultural 403b	15
Organic Chemistry	Agricultural 103a	2
Chemical Laboratory	Agricultural 110c	6

Subject	*Number of Course*	*Hours per Week*
Bacteriology	Veterinary 108	6
Botany and Bot. Laboratory	Agricultural 303	5
Military Drill	Academic 600	3

Second Term.

Pharmacy	Agricultural 403a	5
Prescriptions	Agricultural 404	3
Pharmaceutical Laboratory	Agricultural 403b	15
Organic Chemistry	Agricultural 103a	2
Chemical Laboratory	Agricultural 110c	6
Bacteriology	Agricultural 508	6
Botany and Bot. Laboratory	Agricultural 303	5
Military Drill	Academic 600	3

Third Term.

Pharmacy	Agricultural 403a	5
Prescriptions	Agricultural 404	3
Pharmaceutical Laboratory	Agricultural 403b	15
Organic Chemistry	Agricultural 103a	2
Toxicology	Agricultural 110e	7
Therapeutics	Agricultural 521	3
Botany and Bot. Laboratory	Agricultural 303	5
Military Drill	Academic 600	3

THREE-YEAR COURSE IN PHARMACY.

In the first and second years the same studies are prescribed as in the Two-Year Course.

THIRD YEAR.

First Term.

Pharmaceutical Chemistry and Laboratory	Agricultural 405	20
Chemistry and Chemical Laboratory	Agricultural 107, 110	15
Bacteriological Laboratory	Veterinary 108	3

Second Term.

Pharmaceutical Chemistry and Laboratory	Agricultural 405	20
Chemistry and Chemical Laboratory	Agricultural 107, 110	15
Bacteriological Laboratory	Veterinary 108	3

Third Term.

Pharmaceutical Chemistry and Laboratory	Agricultural 405	20
Chemistry and Chemical Laboratory	Agricultural 107, 110	15
Bacteriological Laboratory	Veterinary 108	3

COLLEGE OF VETERINARY MEDICINE AND SURGERY.

THREE-YEAR COURSE IN VETERINARY MEDICINE.

FIRST YEAR.

First Term.

Subject	*Number of Course*	*Hours per Week*
General Chemistry	Agricultural 101	4
Physiology	Veterinary 101	2
Physics	Academic 501	3
Anatomy and Anat. Lab'y	Veterinary 119	2
Histology	Veterinary 104	5
Live Stock Management	Agricultural 810	2
Chemical Laboratory	Agricultural 110b	6
Military Drill	Academic 600	3

Second Term.

General Chemistry	Agricultural 101	4
Physiology	Veterinary 101	2
Physics	Academic 501	3
Anatomy and Anat. Lab'y	Veterinary 119	14
Histology	Veterinary 104	5
Stock Feeding	Agricultural 810	2
Chemical Laboratory	Agricultural 110b	6
Military Drill	Academic 600	3

Third Term.

General Chemistry	Agricultural 101	3
Physiology	Veterinary 101	2
Anatomy and Anat. Lab'y	Veterinary 106	14
Embryology	Veterinary 105	5
Judging Live Stock	Agricultural 804	2
Chemical Laboratory	Agricultural 110b	6
Military Drill	Academic 600	3

SECOND YEAR.

First Term.

Botany	Agricultural 304	2
Pharmacy	Agricultural 403	1
Pharmacy Laboratory	Agricultural 403a	4
Veterinary Physiology	Veterinary 106	2
Bacteriology and Bact. Lab'y	Veterinary 108	6
Obstetrics	Veterinary 110	2
Veterinary Medicine	Veterinary 123	3
Anatomy and Clinical Lab'y	Veterinary 119, 122	12
Military Drill	Academic 600	3

Second Term.

Botany	Agricultural 304	2
Pharmacy	Agricultural 403a	5
Pharmacy Laboratory	Agricultural 403a	4

Subject	*Number of Course*	*Hours per Week*
Veterinary Physiology	Veterinary 106	2
Bacteriology, Pathology and Laboratory	Veterinary 108, 109	6
Obstetrics and Surgery	Veterinary 110, 111	2
Veterinary Medicine	Veterinary 123	3
Anatomy and Clinical Lab'y	Veterinary 119, 122	12
Military Drill	Academic 600	3

Third Term.

Pharmacy	Agricultural 403a	1
Pharmacy Laboratory	Agricultural 403a	4
Veterinary Physiology	Veterinary 106	2
Therapeutics	Veterinary 120	3
Surgery	Veterinary 121	3
Veterinary Medicine	Veterinary 123	3
Pathology and Path. Lab'y	Veterinary 109	6
Anatomy and Clinic Lab'y	Veterinary 119, 122	12
Military Drill	Academic 600	3

THIRD YEAR.

First Term.

Dairying	Agricultural 802	2
Stock Breeding	Agricultural 806	2
Therapeutics	Veterinary 120	3
Surgery	Veterinary 121	2
Veterinary Medicine	Veterinary 123	3
Infectious Diseases	Veterinary 113	2
Meat Inspection	Veterinary 115	2
Anatomy and Clinic Lab'y	Veterinary 119, 122	12
Thesis	Veterinary 118	4

Second Term.

Surgical Exercises	Veterinary 112	2
Therapeutics	Veterinary 120	3
Surgery	Veterinary 121	2
Veterinary Medicine	Veterinary 123	3
Infectious Diseases	Veterinary 113	3
Meat Inspection	Veterinary 115	2
Animal Parasites	Veterinary 114	2
Clinic Laboratory	Veterinary 122	12
Thesis	Veterinary 118	4

Third Term.

Toxicology	Agricultural 110e	7
Urinalysis	Veterinary 117	3
Surgery	Veterinary 121	2
Veterinary Medicine	Veterinary 123	3
Milk Inspection	Veterinary 116	3
Animal Parasites	Veterinary 114	2
Clinic Laboratory	Veterinary 122	12
Thesis	Veterinary 118	4

MONDAY.

TUESDAY.

WEDNESDAY.

THURSDAY.

FRIDAY.

SATURDAY.

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Mathematics.

M. S.,

SCHEDULE OF EXERCISES

RS	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.	SATURDAY.
rst -9	2. Arch. History. 4. Algebra. 3. Latin. 2. Pharmacy. 2. Mech. Engineering. 1. and 2. Drawing. 1. Elec. Engineering. 1. Botany. 1. German. 1. Bacteriology. 1. An. Chem. (Mining) 2. Bacteriology (1, 2). 2. Gen. Path. (2, 3). 1. Vet. Medicine (1,2). Horticultural Lab'y	2. Graphics. 4. Geometry. 3. Agriculture (2, 3). 3. An. Industry (1). 3. Latin. 2. Mineralogy. 2. German. 2. Botany Lab'y (Phar.) 1. and 2. Drawing. 1. Elec. Engineering. 2. Machine Design. 2. Obstetrics (1, 2). 1. Inf. Diseases (1, 2)	2. Graphics. 4. Algebra. 3. Latin. 2. Pharmacy. 2. Vet. Science. 2. Mech. Engineering. 1. Botany. 1. and 2. Drawing. 1. Elec. Engineering. 1. German. 1. Dairy Farming (2). 3. Ext. Anatomy. 1. Milk Insp. (3). 1. Inf. Diseases (1, 2).	4. Geometry. 3. Latin. 3. Chemistry. 2. German. 2. Botany Lab'y. (Phar.) 2. Mech. Engineering. 2. Mineralogy. 1. and 2. Drawing. 1. Elec. Engineering. 1. Therapeutics (1, 2). 3. Histology.	2. Theory of Arch. 4. Algebra. 3. Latin. 2. Pharmacy. 2. Vet. Science. 1. and 2. Drawing. 1. Elec. Engineering. 1. German. 2. Machine Design. 1. Int. Diseases (1, 2). 3. Ext. Anatomy. 1. Milk Insp. (3). 1. Botany (Agr.).	Exercises in Elocution 1. Farm Machin'y (3) 1. Soils (1, 3). 2. Pharmacy.
ond 10	4. English. 3. Chemistry. 2. Civil Engineering. 1. Elec. Engineering. 2. Min. Engineering. 2. Latin. 1. Calculus. 1. Botany Lab'y. 1. Bacteriology. 1. An. Industry Lab'y. 2. Bacteriology (1, 2). 2. Gen. Path. (2, 3). 1. Surgery (1, 2). Horticultural Lab'y	4. History. 3. Physiology. 3. Descriptive Geom'y. 2. Elec. Engineering. 2. Civil Engineering. 1. Mech. Engineering. 2. Min. Engineering. 2. Botany Lab'y. (Phar.) 2. Botany (Agr.). 1. French. 1. Agriculture. 2. Mach. Design (M.E.) 1. Metallurgy. 3. Histology.	4. English. 3. Chemistry. 2. Civil Engineering. 2. Elec. Engineering. 2. Min. Engineering. 2. Latin. 2. An. Industry (3). 2. Horticulture (1, 2). 1. Calculus. 1. Pharmacognosy. 1. Botany Lab'y. 3. Histology. 1. Vet. Medicine. 2. Surgery (3). 1. Soils and Farm Machinery.	4. History. 3. An. Industry (1). 3. Agriculture (2, 3). 2. Civil Engineering. 2. Botany (Agr). 2. Elec. Engineering. 1. Mech. Engineering. 2. Min. Engineering. 2. Botany (Agr.). 1. French. 1. Vet. Science. 1. Machine Design. 1. Metallurgy. 2. Arch. History. 3. Histology. 1. Vet. Medicine.	4. English. 3. Chemistry. 2. Civil Engineering. 2. Latin. 2. Machine Design. 2. Min. Engineering. 2. Horticulture (1, 2). 2. An. Industry (3). 1. Calculus. 1. Vet. Science. 2. Vet. Medicine. 1. Soils and Farm Machinery.	Military Drill. 1. Farm Machin'y (3 1. Soils (1, 3). 1. Arch Drawing. 2. Arch. Drawing. 1. Machine Design. 1. Eng. Chemistry.
hird -11	4. Agriculture (3). 3. English. 2. Physics. 1. Civil Engineering. 1. Botany Lab'y. 1. Latin. 1. Bacteriology. 1. An. Industry Lab'y. 1. Arch. Engineering. 2. Bacteriology (1, 2). 2. Gen. Path. (2, 3). 1. Therapeutics (2, 3).	2. Specifications and Bldg. Materials. 4. English. 3. Botany (3). 3. History. 3. Ele. Mechanics (3). 2. Agricultural and Org. Chemistry 2. French. 2. Machine Design. 1. Telephone Eng'n. 1. Horticulture. 1. Elec. Engineering (Min. and Mech.). 1. Animal Industry. 1. Pharmacognosy. 1. Civil Engineering. 1. Botany. 3. Animal Industry. 1. Meat Inspection.	4. Agriculture (3). 3. English. 2. Physics. 1. Latin. 1. Civil Engineering. 1. Botany (Lab'y). 1. Engin. Contracts. 1. Entomology (1, 3). 1. Forestry (2). 1. Arch. Eng'n. 1. Therapeutics (1, 2). 2. Therapeutics (3).	2. Specifications and Bldg. Materials. 4. English. 3. History. 3. Botany (3). 3. Ele. Mechanics (3). 2. Agricultural and Org. Chemistry. 2. French. 2. Prac. Machinery. 1. Telephone Eng'r. 1. Horticulture. 1. Civil Engineering. 1. Elec. Engineering (Min. and Mech.). 1. Animal Industry. 1. Pharmacognosy. 1. Botany. 3. Histology. 1. Vet. Medicine.	4. History (3). 3. English. 2. Physics. 1. Civil Engineering. 1. Pharmacognosy. 1. Horticulture. 1. Arch. Engineering. 2. Therapeutics (3). 2. Obstetrics (1, 2).	Mechanic Arts. Chemical Laboratory. Elec. Laboratory. Physical Laboratory. Veterinary Clinics. Field, Civil and Mining Engineering. 1. Farm Machin'y (3 1. Soils (1, 3). 3. Surveying (3). 1 and 2. Arch Drawin 1. Machine Design. 1, 2, 3. Clinics.
ourth 11-12	3. Arch. Drawing. 4. Agriculture (3). 4. Physics (1, 2). 4. Mechanic Arts. 4. Latin (1, 2). 3. Drawing. 2. Mathematics. 2. Chemistry (Ind.). 2. Pharmacognosy. 1. English (1, 2). 1. Pol. Econ. (2, 3). 2. Chemistry (Org.). 1. Botany. 2. Vet. Medicine.	3. Arch Drawing. 4. Latin. 3. Drawing. 2. Agriculture (1, 3). 2. An. Industry (2). 2. Mathematics. 2. Chemistry (Org.). 2. Pharmacognosy. 1. Physics. 1. Bacteriology. 1 Mental Science. 2. Vet. Physiology. 3. Botany (Vet).	2. Chem. Org. (2). 4. Physics (1, 2). 4. Latin (3). 4. Mechanic Arts. 4. Agriculture (3). 3. History. 3. Botany (3). 3. Ele. Mechanics (3). 2. Mathematics. 2. Chemistry (Ind.). 2. Pharmacognosy. 1. English (1, 2). 1. Pol. Econ. (3). 1. Botany. 2. Gen. Path. (2, 3). 1. The'peutics Ph. (3).	4. Latin. 3. Physiology. 2. Mathematics. 2. Agriculture (1, 3). 2. An. Industry (2). 2. Chemistry (Org.). 1. Physics. 1. Bacteriology. 1. Mental Science. 3. Descript. Geometry. 1. Botany (Agr.). 3. Botany (Vet).	3. Arch. Drawing. 4. Physics (1, 2). 4. Mechanic Arts. 4. Latin (1, 2). 3. Drawing. 2. Mathematics. 2. Chemistry (Ind.). 2. Pharmacognosy. 1. Military Science. 2. Gen. Path. (2, 3).	1. Pharmaceutical La 3. Mechanic Arts. Chemical Laboratory. Electrical Laboratory Physical Laboratory. Veterinary Clinics. Field Work, Civil and Mining Engineer'g 1. Machine Design. 1, 2, 3. Clinics.
Fifth 12-1	1. Arch. Drawing. 4. Drawing. 4. Mechanic Arts. 3. Mathematics. 2. English. 1. Mech. Engineering. 1. Agriculture. 1. French. 1. Pharmacy. 1. Min. Engineering. 1. Botany. 1. Theoret. Chemistry. 2. Vet. Physiology. 1. Meat Inspection.	2. Arch. History. 3. Mathematics. 2. English. 1. Geology. 1. Pharmacy. 1. Mech. Engineering. 3. Surveying (3). 1. Entomology (1, 3). 1. Forestry (2). 1. Therapeutics (1, 2). 2. Vet. Physiology.	4. Drawing. 4. Mechanic Arts. 3. Mathematics. 2. German. 2. Anal. Chemistry. 1. Pharmacy. 1. Min. Engineering. 1. Arch. Drawing. 1. Mech. Engineering. 2. Vet. Medicine. 1. Spec. Path. (1, 2). 1. Milk Insp. (3). 3. Animal Industry.	3. Mathematics. 2. English. 1. Geology. 1. Mech. Engineering. 2. Graphics. 2. Vet. Medicine. 3. Animal Industry. 1. Meat Inspection. 1. Pharmacy.	4. Drawing. 4. Mechanic Arts. 3. Mathematics. 2. Military Tactics. 1. Pharmacy. 1. Min. Engineering. 1. Theoret. Chem. 1. D'ry Farming (2). 1. Arch. Drawing. 1. Botany. 1. Mech. Engineering. 1. Surgery. 3. Histology.	3. Mechanic Arts. 4. Mechanic Arts. Chemical Laboratory. Electrical Laboratory. Veterinary Clinics. Field Work, Civil and Min. Engineering. 1, 2, 3. Clinics.
P. M. 2-6	1, 2. Arch. Drawing. 4. Mechanic Arts. 3. Mechanic Arts. 3. Physical Lab'y. 3. Descriptive Geom. 3. Botanical Lab'y. (3) 1, 2. Field Work, Eng. 1, 2, 3. Chem. Lab'y. 1. 2. Machine Work. 1, 2. Elec. Lab'y. 1. Mech. Lab'y. 2. Botany Lab'y. (1. 2). 1. Entomology (1, 3). 1. Forestry (2). 1, 2. 3. Anatomy Lab'y. 1, 2. Clinics (1, 2). 2. Pharmacy. 1. Toxicology (3). 2. Botany (Phar.).	4. Mechanic Arts. 3. Mechanic Arts. 3. Descript. Geom. 1, 2. Arch. Drawing. 3. An. Ind. Lab. (1,2). 2. Mineralogical Lab'y. 2. Agriculture (1, 3). 1 and 2. History. Elec. Lab'y Work. Military Drill.* 1. An. Ind'y Lab'y (2). 1. Hort. Lab'y. 1, 2. 3. Anatomy. 1, 2. Clinics.	3. Mechanic Arts. 4. Mechanic Arts. 3. Physical Lab'y. 3. Descript. Geom. 3. Botanical Lab. (3). 3. Exercises in Elocu. 1, 2, 3. Chem. Lab'y. 1, 2. Field Work, Eng. 1, 2. Mach. Work. 1. Mech. Laboratory. Elec. Lab'y Work. 2. Botany (Agr.). 1, 2. Arch. Drawing. 2. An. Ind. Lab'y (2). 1. An. Ind. Lab'y. 1, 2. 3. Anatomy. 1. Toxicology (3). 1, 2. Clinics.	1. Spec. and Bldg. Mat. 4. Mechanic Arts. 3. Mechanic Arts. 3. Descript. Geom. 1. Agriculture. 2. Mineralogy Lab'y. 2. Elec. Lab'y Work: 2. Horticulture Lab'y. 1, 2. History. 1. Telephone Lab'y. Military Drill.* 1. Agriculture. 1. Botany. 1, 2, 3. Anatomy. 1, 2. Clinics.	4. Mechanic Arts. 3. Mechanic Arts. 3. Physical Lab'y. 3. Exercises in Elocu. 2. French. 2. Botanical Lab'y. 1. 2, 3. Chem. Lab'y. 1, 2. Field Work, Eng. 1, 2. Mach. Work. 1. Mech. Lab'y. Elec. Lab'y Work. 2. Graphic Statics (2). 1. Machine Design. 1. Mech. Lab'y. 2. Arch. Drawing. 1, 2, 3. Anatomy. 1. Toxicology (3). 1, 2. Clinics.	

Chapel service daily at 7:45 a. m. *From 4:30 to 5:30 p. m.
Numbers prefixed denote classes—1 denotes senior; 2, junior, etc. Numbers affixed —(1), (2), (3), denote terms.

ACADEMIC COLLEGE

FACULTY

CHARLES COLEMAN THACH, M. A., LL. D., President,
Professor of English and Political Economy.

GEORGE PETRIE, M. A., Ph. D., Dean,
Professor of History and Latin.

BENNETT BATTLE ROSS, M. S.,
Professor of General and Agricultural Chemistry.

JOHN EDWARD WIATT, M. A.,
Professor of Modern Languages.

JAMES POWELL COCKE SOUTHALL, M. A.,
Professor of Physics.

BENJAMIN SWEAT PATRICK, M. S.,
Commandant and Professor of Military Science.

BOLLING HALL CRENSHAW, B. S., M. E.,
Professor of Mathematics.

ALBERT HARRIS WILSON, M. S.,
Professor of Mathematics.

ROBERT L. BROWN, B. S., E. M.,
Professor of Geology and Mining Engineering.

REUBEN DAVID WEBB, M. S.,
Associate Professor of Rhetoric and Composition.

JAMES RICHARD RUTLAND, A. B.,
Librarian and Assistant Professor of English.

BERNER LEIGH SHI, C. E.,
Instructor in Mathematics and Drawing.

MICHAEL JOSEPH DONAHUE, A. B.,
Physical Director and Instructor in English and Mathematics.

CASPER CARL CERTAIN, E. E.,
Registrar and Instructor in English.

CINCINNATUS DECATUR KILLEBREW, M. S.,
Instructor in Physics.

JACOB ALLEN WALKER, M. S.,
Instructor in History and Latin.

BENJAMIN EDWARD HARRIS, B. S.,
Assistant in English and Mathematics.

WALTER STANLEY CHILDS, B. S.,
Assistant in Library and English.

HENRY CLARENCE NIXON, B. S.,
Assistant in History.

*JOHN BELTON HODGES, B. S.,
Assistant in English.

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*Resigned.

DEPARTMENTS.

The Academic College has been organized with the following departments:

English and Political Economy.
History and Latin.
Military Science and Tactics.
Special Pedagogical Courses.
Modern Languages.
Mathematics.
Physics.

The facilities for instruction together with the laboratory equipment in each department are described under the head of "Laboratories and Facilities for Instruction," pages 10 to 22 of this catalogue.

In addition, students in the different departments of the Academic College receive instruction in departments of the other colleges as follows:

Mechanic Arts.
Drawing.
Geology.
Animal Industry.
Chemistry.
Botany.
Agriculture.

DEPARTMENTS OF INSTRUCTION

ENGLISH AND POLITICAL ECONOMY.

PRESIDENT THACH.

PROFESSOR WIATT.

ASSOCIATE PROFESSOR WEBB.

ASSISTANT PROFESSOR RUTLAND.

INSTRUCTOR CERTAIN.

ENGLISH.

OBJECTS AND METHODS.

In this department the students pursue a systematic course in the English language and literature.

Language is the avenue of approach to all knowledge; the interpretation of words is the fundamental process in education of whatsoever kind. A full course in English is, therefore, considered especially important in the technical courses of study that do not include the ancient classics. Accordingly, the course in English is continued throughout the four years of the college curriculum, three hours a week, and is made obligatory upon all students, with the exception of those pursuing the first two years of the course in Latin. In this extended drill in the grammar and literature of the English language, the endeavor is made to afford a training somewhat equivalent to the ordinary course in the classical languages.

In view of the ill preparation in languages, especially in their mother tongue, exhibited by many of the candidates for admission to the freshman class, it is deemed advisable, for the sake of honest work, to devote a portion of the first year to grounding such students in the principles of grammar.

Especial attention is given to the study of the writings themselves of leading American and British authors, since direct contact with literature is considered more profitable than information merely *about* literature.

All students before classed as regular in any course leading to a degree must conform to all the requirements in English for admission as set forth on page 55.

For requirements as to thesis and as to proficiency in English for certificates and degrees, see pages 64 and 182.

THEMES AND ORATIONS.

Theory without practice is as fruitless in the study of English as in any other department of study. Practical work is indispensable to the successful teaching of English.

Besides numerous brief papers illustrative of the subject matter of the text-books, set themes or orations are *required of all students.* For the freshman class *ten* themes a year; for the sophomore *ten;* for the senior and junior classes, *three* themes or orations each.

DECLAMATIONS AND ORATIONS.

The old practice of committing pieces to memory for "speaking" is cultivated as a means, both of training in the art of thinking on the feet, and of storing the mind with the diction of finished specimens of English style.

On every Saturday morning, immediately after chapel services, oratorical exercises in declamation and in original orations are conducted by the Professor of English, in the presence of the faculty and students.

The *first and second terms* the students of the junior and sophomore classes are exercised in original orations and in declamations.

The *second and third terms* the members of the senior class read essays or deliver original orations.

COURSE OF STUDY.

FRESHMAN CLASS.

101. (*a*) A review of the elements of grammar: Text-book, Bartlett and McBain's English Grammar. *Two hours, first term.*

(*b*) A study of the formation of the language and of the meaning of words: Text-book, Anderson's Study of English Words. *Two hours, second and third terms.*

102. (*a*) Composition and rhetoric: Frequent brief papers illustrating the laws studied are required, with personal conferences between the student and the instructor for the correction of individual faults. Text-book, Gardiner, Kittredge, and Arnold's Manual of Composition and Rhetoric. *Three hours, first term.*

(*b*) American literature: A study of Bryant, Longfellow, Holmes, Whittier, Poe, Lowell, and Lanier. Text-book, Page's Chief American Poets. *Three hours, second and third terms.*

SOPHOMORE CLASS.

103. (*a*) Rhetoric: Daily practice in paragraph writing and frequent exercises in narrative, description, exposition, and argument, with personal conferences for the correction of faults. Text-book, Advanced Rhetoric. *Three hours, first term.*

(*b*) English prose: A critical study of specimens of all the forms of discourse. Text-book, Carpenter's Model English Prose, and Classics. *Three hours, second term.*

104. (*a*) English poetry: An interpretative study of representative poems. Text-book, Syle's From Milton to Tennyson, and various English classics. In connection with this a brief study of the various periods of English literature is taken up. Text-book, Halleck's English Literature. *Three hours, third term.*

105. Laboratory: The emphasis in the English laboratory work is upon practice, and not upon theory. Lectures are given from time to time on the few essential principles of composition, and special faults of style and errors of structure are commented on in class. Definite exercises are assigned for the practical application of the principles discussed; and through analysis of models of the forms of English prose, through the proper criticism of written exercises by the instructor, and through personal conferences with the students in all the stages of their work, an effort is made to form in the students the habit of writing with clearness and correctness. This course is intended especially for those students in Latin who do not take courses 103 and 104. *Three hours, entire year.*

106. Declamation: The sophomore class is heard weekly throughout the year in sections of ten, twice for an hour and a half in rehearsal, afterwards in the assembly hall before the body of students.

JUNIOR CLASS.

107. Lectures on the history of English literature; critical study of English classics, essays. Standard English poems, Macaulay, Carlyle, DeQuincy, etc. *Three hours, entire session.*

SENIOR CLASS.

108. Principles of criticism, Shakespeare's Julius Caesar, Hamlet, Macbeth, etc. Dowden's Shakespeare, etc. *Two hours, first and second terms.*

109. Advanced composition: All regular juniors and seniors are required, in addition to the composition work incidental to the regular language course, to write one theme each term.

GRADUATE STUDENTS.

110. Postgraduate courses: The following courses have been given:

(a) Shakespeare: Hamlet, Othello, Macbeth, Merchant of Venice, As You Like It, Henry IV, Richard III, King John.

(b) Dryden's Poetical Works; Arnold's Dramatic Poesy; Yonge's Essay on Satire; Saintsbury's Dryden; Pope's Poetical Works; Pattison's Satire; Stephen's Pope; Gosse's From Shakespeare to Pope and 18th Century Literature.

(c) English literature of the 18th century: Addison, Pope, Gray, Goldsmith, Burns, Cowper, Burke.

(d) American literature: Longfellow, Lowell, Poe.

(e) The English essay: Bacon, Addison, Steele, Swift, Johnson, Goldsmith, Macaulay, DeQuincey, Lamb, Carlyle.

(f) Milton's Poetical Works: Life, Pattison, Brooke.

(g) Elizabethan, Jacobean, and Caroline literature: Greene, Jonson, Marlowe, Webster, Beaumont and Fletcher, Browne, Herrick, Bunyan, and others.

(h) English literature, 1832-1894. (Given 1909-1910.) *Four hours, entire year.*

111. For General Course: English literature, 1750-1825. (a) Reading required from Gray, Goldsmith, Johnson, Burke, Cowper, Burns, Thomson, Collins, Fielding, Richardson. Much attention will be given to romantic movement. Study of poetics. (b) Close study of Wordsworth, Coleridge, DeQuincey, and Lamb. Scott, Jane Austin, Landor, and Hazlitt will also be studied. (b) Close study of Byron, Shelley, and Keats. *Three hours, entire junior year.*

112. For General Course: English literature, 1585-1660. (a) Required reading from Greene, Marlowe, Sheakespeare, Bacon, and Milton. Study of principles of drama. Optional reading from Jonson, Beaumont and Fletcher, Spenser, Herick, Lyly, Browne, Taylor, Walton, Bunyan and others. (b) Close study of two of Shakespeare's plays: Hamlet, As You Like It, or Macbeth and Winter's Tale, or Othello and Henry V. *Two hours, first term, senior year.*

113. Methods of teaching English. See page 117.

PHILOSOPHY AND POLITICAL ECONOMY.

The senior class pursue the study of intellectual science, twice a week through the year, and political economy twice a week, during the third term. The instruction in this department is by lectures in combination with text-books.

114. Intellectual science: Psychology defined. Value in relation to moral culture, education, and natural sciences. The relation of the soul to matter. The arguments of the materialist. Counter arguments. The faculties of the soul. The nature of consciousness. Sense perception. Fancy. Imagination. Nature of conceptions. Language. Judgment. Reasoning. Deduction. Induction, etc. *Porter's Intellectual Science. Two hours, entire session.*

115. Political economy: Value; production of wealth; land; labor; capital; division of labor; distribution of wealth; wages; trades union; tariff; education, etc. *Lectures by professor. Ely's Outlines of Economics. Two hours, third term.*

HISTORY AND LATIN.

PROFESSOR PETRIE.

INSTRUCTOR WALKER.

ASSISTANT NIXON.

HISTORY.

In this department the aim is not so much to memorize facts as to understand them. Strong emphasis is laid on the fact that history is not a succession of isolated facts, but a progressive whole, each event being at once the cause and the effect of other events. The students are taught to investigate the growth of ideas and institutions, the rise and progress of great historical movements, and the reciprocal influences of men and circumstances. Frequent use is made of diagrams, photographs, charts, and maps, with which the department is well equipped. Instruction is given by text-books, lectures, and class discussion, but a constant effort is made to stimulate to wider reading and research in the library. The following courses are offered:

FRESHMAN CLASS.

201. History of the United States and of Alabama: The course consists of lectures and text-book work, and is somewhat advanced. All students who take it must have previously completed some school text-book on the history of the United States. Text-book: Elson's History of the United States. *Two hours, first and second terms; three hours, third term.*

SOPHOMORE CLASS.

202. History of modern Europe: Required of all members of the sophomore class. Some previous knowledge of the subject is desirable, but not necessary. Text-book: West's History of Modern Europe. *Three hours, first and second terms.*

203. Ancient history: An extra course intended for those who are deficient on this subject. Text-book: Myers' General History, Part I. *Once a week, one term.*

204. A brief course in recent history: Not required of any students, but those who expect to take the general course may substitute it for botany or mechanics. Text-books: Robinson and Beard's Development of Modern Europe and current periodicals. *Three times a week, third term.*

SENIOR CLASS.

205 English constitutional history: A course for one year for members of the senior class. Text-book will be announced later.

JUNIOR AND SENIOR CLASSES.

206. Historical laboratory: An opportunity for advanced work in United States history for those students of the general course who elect it as laboratory work, and for any others who are properly qualified.

The chief object kept in view is training in historical research and in the formation of independent but careful opinions based on the original sources of information, as well as on the standard authorities. Emphasis is laid on the importance of securing proper material for investigation, and every incentive is given to the collection and use of new documents, papers, and letters illustrative of Southern, and especially of Alabama history. The method of work is as follows: Informal lectures are given on important and suggestive points, as: The cause of the Revolution; the Constitutional Convention; the War of 1812; the Missouri Compromise; the Monroe Doctrine; Texas and Mexico; the Compromise of 1850; the Kansas Struggle; the Dred Scott Decision; Secession. After each lecture a general discussion follows and topics connected with it are assigned to the students with an outline of the points to be investigated. The final results are collected by each student according to his own judgment in his note-book, which is then passed in to the professor for correction and suggestion. Text-book: MacDonald's Select Statutes. *Six Hours, entire session.*

GRADUATE COURSE.

207. Graduate students are expected to take part in the junior and senior discussions, and will also meet with the professor for conference about their work. Each year some special field is taken for investigation and discussion. During the session of 1910-11 the topic will be the period from Washington to Jackson. Those who take history as their major study are expected to devote a large part of their time to research upon some topic upon which they can consult the original sources of information.

208. Teachers' course: Conferences every other week with those students who expect to teach history.

LATIN.

The objects kept in view in this department are: An accurate knowledge of the forms and syntax; a familiarity with Latin words, their etymology and their English derivatives; an appreciation of Latin literature and an intelligent conception of Roman history and civilization both in themselves and in their effect on the modern world.

A systematic course of instruction is given in the forms and syntax. These are taught both deductively from a grammar and inductively from the text read. Translation is constantly practiced, sometimes at sight, sometimes after being assigned for preparation. English passages based on a familiar author or illustrative of special constructions are put in Latin, both orally and in writing. Great emphasis is laid on the etymology of the words in the text read.

In connection with every author studied in class, a course of reading in English is prescribed descriptive of his life, work, and times. The historical setting and the literary value of his writings are carefully discussed and frequent comparisons are made with modern authors.

In the freshman and sophomore classes the study of the language is the chief point. In the higher classes a broader view is taken. The junior class makes a special study of Roman history and Roman historians. The senior class studies Roman poetry and Roman life.

In the senior class a brief pedagogical course is given during the third term for those who expect to be teachers of Latin. This includes work on the forms and syntax, and in Caesar and Virgil.

The following courses are offered with the text-books named:

209. Freshman class: Exercises, Cicero, Sallust, or equivalent. Allen and Greenough's Latin Grammar. *Four hours, first and second terms; three hours, third term.*

210. Sophomore class: Cicero, Allen and Greenough's Grammar, Bennett's Latin Composition. *Five hours, entire year.*

211. Junior class: Livy, Tacitus, grammar, Roman history, exercises. Allen and Greenough's Grammar, Botsford's History of Rome. *Three hours, entire year.*

212. Senior class: Horace, Latin literature, grammar. Allen and Greenough's Grammar. *Three hours, entire year.*

213. Pedagogical course: During the spring term a pedagogical course is given in Latin. It is designed chiefly, but not exclusively, for members of the senior class. It includes a discussion of the methods of teaching forms and syntax, as well as concrete illustrations of the way to overcome difficulties in Caesar and Virgil.

MODERN LANGUAGES.

PROFESSOR WIATT.

The chief aim in this department is to give the student a thorough and accurate knowledge of the elementary principles of the subjects taught, and to enable him to read with facility the ordinary French and German at sight. To train the ear, acquire a correct pronunciation and some facility in speaking, all recitations are supplemented, as far as practicable, by oral exercises in the languages themselves.

FRENCH.

The following regular courses are given:

JUNIOR CLASS.

301. (*a*) A course covering the essentials of grammar and pronunciation to enable the student to begin the reading of simple French prose. This course continues through the first term, three hours a week being given to the study of grammar and one hour to pronunciation and conversation. *Four hours, first term.*

(*b*) The second term includes a course of reading in simple prose (2 hours a week), and the continuation of grammar with translations of English into French (1 hour a week.) *Three hours, second term.*

(*c*) During the third term the reading of more advanced selections in prose and poetry is begun (2 hours a week); grammar and composition (1 hour a week); and pronunciation and conversation (1 hour a week). *Four hours, third term.*

SENIOR CLASS.

302. (*a*) A course in reading: Corneille and modern French plays (2 hours a week); laws of grammar and composition (1 hour a week); pronunciation and conversation (1 hour a week). *Four hours, first term.*

(*b*) The second term is given to the study of Racine and the reading of modern French literature (2 hours a week), and to continued study of the structure and syntactical features of the language in connection with translations into French. *Four hours, second term.*

(*c*) The third term includes a study of Moliere (1 hour a week); the history of French literature (1 hour a week); more advanced work in grammar and composition (1 hour a week), and pronunciation and conversation (1 hour a week). *Four hours, third term.*

303. Teachers' course: During the spring term the work of the senior class will be so modified or supplemented, as to include a short pedagogical course for students who expect to teach

French. This will consist chiefly of elementary work in grammar and syntax and a study of the best methods of giving instruction in this subject. *Third term, senior year.*

GRADUATE STUDENTS.

304. Graduate course: Offered for students who wish to pursue the study of French beyond the scope to which a two-year course necessarily limits them. In addition to the authors studied in the lecture room, a wide and extensive reading of literature is prescribed.

TEXT-BOOKS.

First Year: Aldrich and Foster's French Grammar, and Locard's Supplementary Exercises. Super's Reader.

Second Year: Corneille, Racine, Moliere, selected modern French plays, Duval's Histoire de la Litterature Francaise, Fraser and Squair's French Grammar, French Composition.

GERMAN.

The following regular courses are given:

JUNIOR CLASS.

305. (*a*) A course embracing the fundamental principles of grammar and the essentials of pronunciation leading to the intelligent reading and translation of simple German texts (3 hours a week), and exercises in pronunciation and conversation (1 hour a week). *Four hours, first term.*

(*b*) In the second term the reading of simple prose is begun (2 hours a week), and grammar and composition continued (1 hour a week). *Three hours, second term.*

(*c*) Reading of more difficult selections of prose and poetry is begun and continued throughout the third term (2 hours a week). Grammar and composition continued (1 hour a week), and conversational exercises (1 hour a week. *Four hours, third term.*

SENIOR CLASS.

306. (*a*) A course of reading in modern German (2 hours a week); structure and syntax of the language with translations into German (1 hour a week); conversation (1 hour a week). This is continued through the first term. *Four hours, first term.*

(b) Schiller (2 hours a week); History of German literature (1 hour a week); composition (1 hour a week). Four *hours, second term.*

(c) German lyrics and ballads (2 hours a week). German literature (1 hour a week), composition and conversation (1 hour a week). *Four hours, third term.*

307. A course for students from the scientific schools, including readings on various scientific subjects, selected to meet the requirements of the class (2 hours a week), grammar and composition (1 hour a week) and conversation (1 hour a week). *Four hours, entire session.*

308. Teachers' course.

During the third term in the senior class of German, the course will be so modified, or supplemented, as to include a short pedagogical course for those students who expect to become teachers of this language.

This will consist chiefly of elementary work in grammar and syntax and a study of the best methods of giving instruction in the subject.

GRADUATE STUDENTS.

309. Advanced course: For those students who wish to pursue the study of German beyond the scope to which a two-year course necessarily limits them. Here, in addition to the authors studied in the lecture room, a wide and extensive reading of authors and literature is prescribed.

TEXT-BOOKS.

First Year: Joynes-Meissner's Grammar, Huss's German Reader.

Second Year: Schiller, Lessing, selected modern German plays, German Lyrics, Bernhardt's Deutsche Litteraturgeschichte, Whitney's German Grammar, Harris's German Composition.

MATHEMATICS.

PROFESSOR CRENSHAW.

PROFESSOR WILSON.

PROFESSOR PATRICK.

INSTRUCTOR STOKES.

INSTRUCTOR SHI.

In this department, two objects are sought to be obtained: first, mental discipline; second, a thorough knowledge of the principles of pure mathematics and their practical applications.

In all the courses, instruction in text-books is supplemented by lectures. Solutions of original practical problems are required of the student to make him familiar with the application of principles and formulas.

Theoretical and practical instruction is given to the sophomore class in land surveying, mapping, plotting, computing areas, etc., also in the theory and adjustment, and use of instruments, and in triangulation. The class, in sections of six or eight, devote three afternoons a week during the third term to field practice. The completion of this course, common to all students, lays the foundation for the pure and applied mathematics of the mechanical and the engineering courses.

Analytic geometry and the calculus are studied in the engineering courses. Especial attention is given to their practical applications.

The courses offered in the different classes in this department are as follows:

FRESHMAN CLASS.

401. Algebra to logarithms: *Three hours, first term; two hours, second and third terms.*

402. Geometry (completed): Especial attention to solution of original exercises. *Two hours, first term; three hours, second and third terms.*

SOPHOMORE CLASS.

403. Advanced algebra: *Five hours, one term.*

404. Plane trigonometry: *Five hours, two terms.*

405. Surveying, triangulation, mensuration: *Three hours, third term.*

JUNIOR CLASS.

406. Analytic geometry: *Three hours, entire year.*

407. Differential calculus: *Two hours, entire year.*

SENIOR CLASS.

408. Differential and integral calculus: *Three hours, first and second terms.*

GRADUATE STUDENTS.

409. Differential equations: *Two hours, entire year.*

410. Methods of teaching mathematics: The department offers a course designed for teachers of elementary mathematics, or for those who expect to make this their profession. The elementary branches of mathematics will be reviewed with especial attention to those portions presenting unusual difficulties to beginners, or which deserve emphasis on account of their importance. Methods of teaching will be briefly discussed, and the course will keep constantly in view the co-ordination of the lower branches with the higher. It will include also a brief *resume* of the history of the elementary subjects; a critical examination of the extant textbooks; and finally, an outline of a course of study in advanced mathematics to be pursued by the teacher. *The hours will be arranged later.*

TEXT-BOOKS.

Wentworth's Geometry, Wentworth's Higher Algebra, Fine's Algebra, Wentworth's Trigonometry and Surveying, Tanner & Allen's Analytic Geometry, Granville's Calculus, Johnson's Differential Equations, Cohen's Differential Equations.

PHYSICS.

PROFESSOR SOUTHALL.

INSTRUCTOR KILLEBREW.

The complete course of physics extends over four years, and is designed to give, as far as possible, an adequate and correct idea of the methods of physical science and to lay the foundation for subsequent advanced work if (as must often be the case, especially in an institution such as this) the student desires to pursue the subject further or intends to engage in any of the great engineering professions of which physics is so important a basis. The lectures are illustrated by experiments; the students are required to work numerous problems and exercises.

FRESHMAN CLASS.

501. This is very elementary. The object in view is to make the student familiar with the fundamental principles of physics. (The text-book will be announced later). *Three hours, first and second terms.*

SOPHOMORE CLASS.

502. This is a laboratory course, and deemed especially important for students of engineering, and of great advantage to such as intend to pursue the subsequent higher work in this department. The laboratory exercises are carefully selected, being designed to illustrate the fundamental methods and principles of physics, and, although the work is necessarily more or less elementary, at the same time such accuracy and precision as the conditions admit of are insisted upon, so that the student is expected to acquire a fairly correct idea of modern experimental investigation. The exercises consist of the fundamental measurements of length, mass, density, moduluses of elasticity, pendulum experiments, etc., together with a few more advanced experiments in connection with the similar properties of liquids and gases, and the general phenomena of heat and sound. The student is required to write a careful report of such experiments, entering the results of observation in tabular form, and plotting a curve wherever practicable;

also describing the object, apparatus, and method, and noting sources of errors, etc. Great stress is laid upon this requirement, and reports are not accepted unless they indicate that the student has done his best in every way. *Four hours, entire year.*

503. Elementary mechanics: Lectures, text-book, problems and exercises. (Text-book will be announced later). *Three hours, third term.*

JUNIOR CLASS.

504. This is a more advanced course in general physics required of all candidates for a degree. The only preparation needed is a good working knowledge of mathematics through plane trigonometry. The course includes a series of illustrated lectures on the principles of dynamics, as applied to solids, liquids, gases, sound, and heat, in the order named. Written exercises are required each week. (Text-book to be announced later.) *Three hours, entire year.*

SENIOR CLASS.

505. This course, although more advanced than the junior course, and occasionally employing the higher mathematics, is a continuation of the work of the previous year. It might be called a course in elementary mathematical physics, and the subjects varying from year to year, that are treated in the lectures are such branches of physics as kinematics and dynamics, thermodynamics, electricity and magnetism, geometrical and physical optics, etc. The student is encouraged to solve difficulties for himself, and to read the standard treatises and original memoirs on the various topics that come under discussion. *Two hours, first and second terms.*

506. Astronomy: A brief course of lectures in descriptive astronomy. *Two hours, third term.*

(The text-books in this class vary with the changing subjects, and will be announced by the professor each year).

507. Teachers' course: In the spring term a course will be offered for those members of the senior class who expect to teach physics. Methods of teaching the theory will be discussed and practical training will be given in the use of the laboratory for school purposes.

GRADUATE STUDENTS.

508. Physics and mechanics: this course will be designed to meet the needs of the students who take it. It will include both theoretical and experimental work in more advanced mathematical physics, or in analytical mechanics.

MILITARY SCIENCE AND TACTICS.

COL. B. S. PATRICK, Commandant.

Military science and tactics are required by law to be taught at this institution. The law is faithfully carried out by imparting to each student, not physically incapacitated to bear arms, practical instruction in the school of the soldier, of the company, and of the battalion in close and extended order, in guard mounting, inspections, parades, reviews, etc.

Under section 1225, U. S. Revised Statutes, the college is provided with U. S. magazine rifle, calibre 30, model 1898, and accoutrements.

The following uniform of standard cadet gray cloth has been prescribed for dress: coat and trousers as worn for fatigue at West Point, with dark blue cadet cap. A neat and serviceable uniform can be obtained for fifteen dollars. This is less expensive than the usual clothing. All students are required to wear this uniform during the session.

The entire body of students is divided into companies. The officers are selected for military efficiency, good conduct, and scholarship. The commissioned officers will be selected from either the senior or the junior class, and promotion will depend on merit and not wholly on seniority.

A band, composed of cadets, furnishes appropriate music at all reviews and parades, and on other special occasions.

A student who has once accepted an office cannot resign it except for reasons entirely satisfactory to the president and the commandant. The resignation of an office will usually not be considered without first placing all the circumstances to the case before his parent or guardian.

Candidates for appointment or promotion may be required to stand an examination. Moral fitness, including demerits, will be considered.

Each company is officered by one captain and two first lieutenants, one second lieutenant, and a proper number of non-commissioned officers. The officers and non-commissioned officers are distinguished by appropriate insignia of rank. These appointments are confirmed by the president on nomination of the commandant.

On the graduation of each class the names of such students as have shown special aptitude for military service will be reported to the Adjutant-General of the U. S. Army, and the names of the three most distinguished in military science and tactics will be inserted in the U. S. Army Register, and published in general orders from headquarters of the army.

The theoretical course in military science and tactics is begun in the junior and continued through the senior year.

The following are the courses prescribed:

600. Military drill: Required of all freshmen, sophomores, and juniors not physically incapacitated to bear arms. *Three hours, entire year.*

JUNIOR CLASS.

601. Infantry drill regulations: *One hour, first and second terms.*

602. Firing regulations for small arms: *One hour, third term.*

SENIOR CLASS.

603. Security and information (Wagner): *One hour, first term.*

604. Field service regulations: *One hour, second term.*

605. Manual of guard duty: *One hour, third term.*

SPECIAL COURSES FOR TEACHERS.

The courses described here are practical courses in the methods of instruction and are designed especially for teachers in Alabama schools and for those students who expect to teach after leaving college. They are given under the direction of the various departments by instructors who have had extensive experience in teaching and who are familiar with the existing conditions in the schools in the state. While in a few of the courses the instruction consists mainly of the study of texts on methods and lectures and discussions on methods of teaching specific subjects, in most of them the subject matter as well as the method is given. If there is sufficient demand, any department of the college will offer courses which may be carried on without the formal attention of the professor, in which the reading work will be outlined and supplemented by conferences from time to time. The following courses are offered:

701. In English: This course is planned especially to suit the needs of those who are now teaching English in elementary or secondary schools and those who expect to become teachers of English. It will include discussions of the existing needs in Alabama schools, general instruction in methods of study and presentation

of literature, and lectures on practical methods of teaching grammar and composition, together with actual work in this subject. It will also be the purpose of the course to examine various text-books available for instruction in English and to put the student in touch with such books as he will find useful in his work and in his own development. *Two hours, third term.*—ASSOCIATE PROFESSOR WEBB and ASSISTANT PROFESSOR RUTLAND.

702. In history: For those who expect to teach history a conference is held once every two weeks. The chief purpose is to obtain a clear understanding of the practical difficulties that confront teachers of history and to suggest the best ways to meet them. The discussions deal with both American and European history.—PROFESSOR PETRIE.

703. In Latin: During the spring term a pedagogical course is given in Latin. It is designed chiefly, but not exclusively, for members of the senior class. It includes a discussion of methods of teaching forms and syntax, as well as concrete illustrations of the ways to overcome difficulties in Caesar and Virgil.—PROFESSOR PETRIE.

704. In French and German: During the third term in the senior class of French and German, the courses will be so modified, or supplemented, as to include a short pedagogical course for those students who expect to become teachers of these languages. This will consist chiefly of elementary work in grammar and syntax and a study of the best methods of giving instruction in these subjects. *Third term.*—PROFESSOR WIATT.

705. In mathematics: The department of mathematics offers a course designed for teachers of elementary mathematics, or for those who expect to make this their profession. The elementary branches of mathematics will be reviewed with especial attention to those portions presenting unusual difficulties to beginners, or which deserve emphasis on account of their importance. Methods of teaching will be briefly discussed, and the course will keep constantly in view the co-ordination of the lower branches with the higher. It will include also a brief *resume* of the history of the elementary subjects; a critical examination of the extant text-books; and finally an outline of a course of study in advanced mathematics to be pursued by the teacher. *The hours will be arranged later.*—PROFESSORS CRENSHAW and WILSON.

706. In physics: In the spring term a course will be offered for those members of the senior class who expect to teach physics. Methods of teaching the theory will be discussed and practical training will be given in the use of the laboratory for school purposes.—PROFESSOR SOUTHALL.

707. In library methods: The course offered by the library will have for its object the training of teachers in the formation, care, and use of a school library. Elementary instruction in the principles of dictionary cataloguing and of the decimal classification will be given, followed by a detailed study of reference books, together with practical problems worked out in the library. In ad-

dition there will be lectures on library organization and equipment, the routine work of a small library, and the selection and ordering of books. *Hours to be arranged.*—MISS SHIVERS.

708. In manual training: Courses in elementary wood work and iron work are offered. These courses will be adapted as far as possible to the individual needs of those taking the courses, and in addition to the shop work will include lectures and conferences on the organization of courses and the equipment of shops for manual training. *Hours to be arranged.*—PROFESSOR WILMORE.

709. In physical geography: In the course in general geology will be found much that is especially applicable to physical geography. It takes up a study of subterranean and surface agencies both as to their destructive, and constructive processes. The results of these processes are then taken up in a study of the topography of the surface of the earth under the following heads: The geographic cycle; land sculpture; topography as determined by faults and joints; adjustment of rivers; sea-coasts; mountain ranges. *Two hours, first and second terms.*—PROFESSOR BROWN.

710. In drawing and descriptive geometry: A course in the methods of teaching drawing and descriptive geometry is given to those who wish to prepare for teaching these branches. This course includes advanced work in the form of problems, supplemented by frequent conferences with the instructor, a complete bibliography of works on the subjects, and an extended course in reading. Those who desire to avail themselves of an opportunity to practice the teaching of the subjects, may be permitted to attend the meetings of the large classes in elementary work for the purpose of observing methods of teaching. Those who show sufficient preparation may be allowed to assist in tutoring delinquent students and those who enter conditioned. Special attention is given to the subject of drawing as taught in high school work.—PROFESSOR FULLAN.

711. In chemistry: In this course, students who have had the necessary preliminary work in chemistry will be afforded the opportunity of taking laboratory practice in experimental chemistry for lecture purposes and for the purpose of the practical study of methods of handling classes in experimental laboratory work. Advanced students can also take the course in the history in chemistry which is provided in the senior year of the course in chemistry and metallurgy. *Hours to be arranged.*—PROFESSOR ROSS.

712. In biology (in botany and zoology): This course embraces practical and detailed work in biology, including both laboratory practice and class work in the principles of botany and zoology as well as instruction in the methods of teaching these subjects. It is especially arranged for those who expect to teach botany and zoology in the public schools, and will be supplemented by independent reading and work assigned from time to time and by conferences with the instructor. *Hours will be arranged.*—PROFESSOR LLOYD.

713. In agriculture: Methods of teaching agriculture. This is a course of lectures and laboratory and field exercises intended

to meet the needs of those who expect to teach agriculture or nature study in the common schools and agriculture in the high schools. Special attention is given to plans for school gardens and the selection of material for illustrating the principles of agriculture, and practice will be given in conducting a number of simple demonstrations. Frequent excursions will be made to the fields.

Lectures and laboratory, *one hour each, third term.*

Teachers and those who are preparing to teach are advised to take as many of the courses in agriculture as their time permits. It is especially desirable that those intending to take the teachers' course shall have previously taken *Agriculture* 203, or its equivalent.—PROFESSOR DUGGAR.

714. In physiology and hygiene: The department of physiology and veterinary medicine can give the following course of instruction to prospective Alabama teachers:

(*a*) Structure of human body and animals.
    (1) Study of cells, tissues, and organs.
    (2) How to use the smaller animals in taking naked eye anatomy.

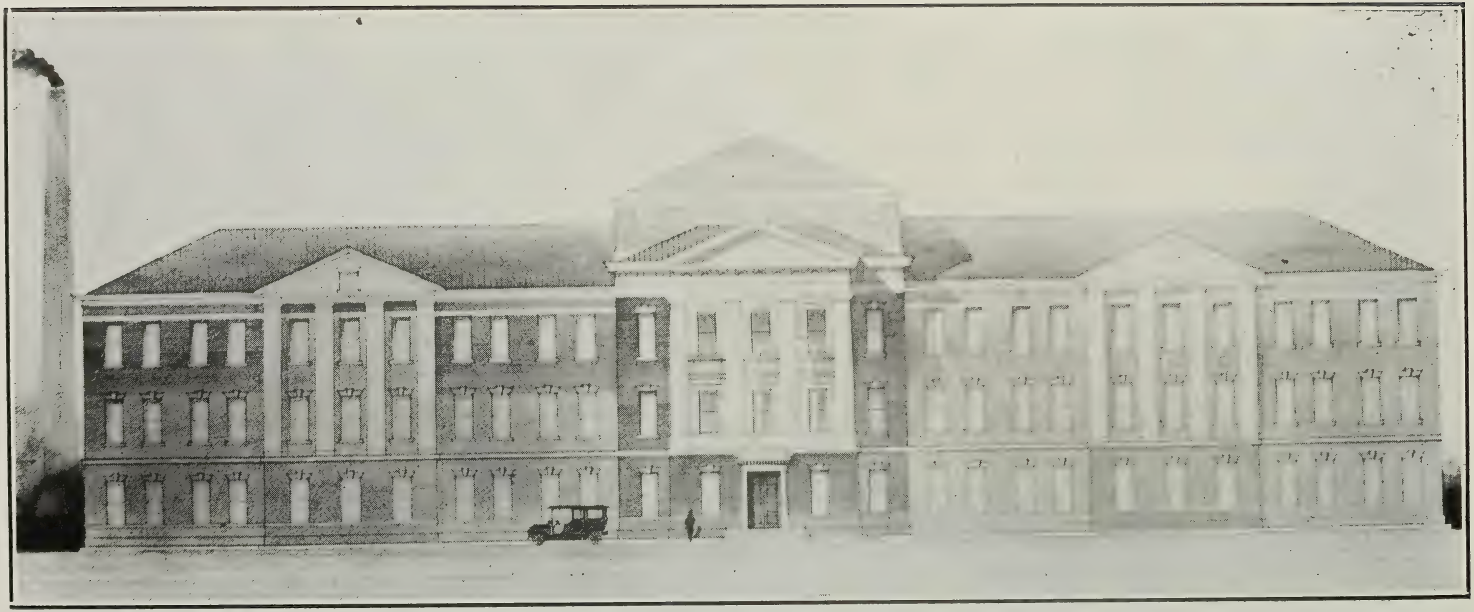
(*b*) Physiological actions of the different parts and products of the animal and the human body. This embodies:
    (1) Functional tests.
    (2) Chemico-physiological tests.
    (3) Physico-physiological tests.

(*c*) Hygiene, embracing instruction in personal health problems.

(*d*) Sanitation, including health conditions of cities, homes, public buildings, farms, barns, dairies, etc.

(*e*) Care of animals on the farm and in the city.—PROFESSOR CARY.

715. In horticulture and school gardening: This course embraces instruction in nature study, the use of school gardens, and elementary landscape gardening. Though the course is largely practical in its nature, much attention is given to the methods of teaching elementary horticulture, the use of texts, and experiments suitable for elementary and high school grades. *Hours to be arranged.*—PROFESSOR MACKINTOSH.



William LeRoy Broun Engineering Hall

COLLEGE OF ENGINEERING AND MINES

FACULTY

CHARLES COLEMAN THACH, M. A., LL. D., President,
Professor of English and Political Economy.

JOHN JENKINS WILMORE, M. E., Dean,
Professor of Mechanical Engineering, and Director of Laboratories.

BENNETT BATTLE ROSS, M. S.,
Professor of Chemistry.

ARTHUR ST. CHARLES DUNSTAN, M. E., C. E.,
Professor of Electrical Engineering.

JAMES POWELL COCKE SOUTHALL, M. A.,
Professor of Physics.

BENJAMIN SWEAT PATRICK, M. S.,
Professor of Military Science and Tactics.

GEORGE NATHAN MITCHAM, C. E., E. M.,
Professor of Civil Engineering.

BOLLING HALL CRENSHAW, B. S., M. E.,
Professor of Mathematics.

ALBERT HARRIS WILSON, M. S.,
Professor of Mathematics.

NATHANIEL CORTLANDT CURTIS, B. S.,
Professor of Architecture and Drawing.

ROBERT L. BROWN, B. S., E. M.,
Professor of Geology and Mining Engineering.

MICHAEL THOMAS FULLAN, M. E.,
Professor of Mechanical Drawing and Machine Design.

WILLIAM WELCH HILL, E. E.,
Associate Professor of Telephone Engineering.

WILLIAM B. STOKES, M. E.,
Instructor in Mechanical Engineering.

BERNER LEIGH SHI, C. E.,
Instructor in Mathematics and Drawing.

CINCINNATUS DECATUR KILLEBREW, M. S.,
Instructor in Physics.

WILLIAM LeROY MITCHELL, M. E.,
Instructor in Mechanical Engineering.

CHARLES ROBERT HIXON, M. E.,
Instructor in Mechanical Engineering.

CARL GILBERT GAUM, E. E.,
Instructor in Drawing.

JAMES LISTER SKINNER, E. E.,
Assistant in Electrical Engineering.

JAMES GREY STELZENMULLER, B. S.,
Assistant in Civil Engineering.

JOSIAH WHITTAKER POWELL, B. S.,
Assistant in Mechanic Arts.

WALKER REYNOLDS, M. S.,
Assistant in Mathematics.

DANIEL HERREN, B. S.,
Assistant in Civil Engineering.

GILBERT GRAFFENREID GLOVER, B. S.,
Assistant in Mining Engineering.

DEPARTMENTS.

The College of Engineering and Mines has been organized with the following departments:

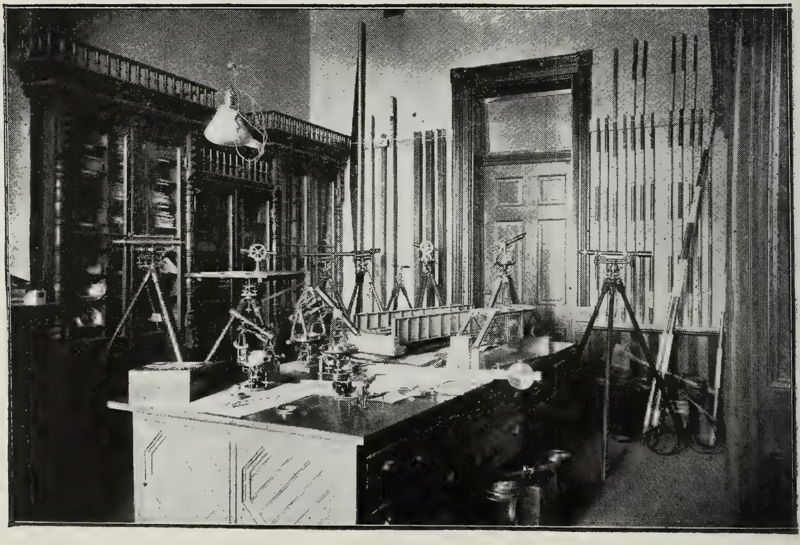
Civil Engineering.
Electrical Engineering.
Mechanical Drawing and Machine Design.
Mechanical Engineering.
Mining Engineering.
Architecture.

The facilities for instruction together with the laboratory equipment in each department are described under the head of "Laboratories and Facilities for Instruction", pages 10 to 22 of this catalogue.

In addition, students in the different departments of the College of Engineering and Mines receive instruction in other departments of the Institute as follows:

English.
Mathematics.
History and Latin.
Modern Languages.
Physics.
Chemistry.
Military Science and Tactics.

Architecture



Civil Engineering

CIVIL ENGINEERING.

PROFESSOR MITCHAM.

ASSISTANT STELZENMULLER.

ASSISTANT HERREN.

The following courses are offered in this department:

SOPHOMORE CLASS.

101. Theory of surveying: For students in civil and mining engineering and in agriculture. Instruction in this subject will include a course of lectures on construction, use, adjustment, and care of instruments; determination of true meridian; farm surveys; government land survey system; azimuth traverse; repetition traverse; balancing survey; theory of stadia measurements; differential and profile leveling; plane table surveys; topographical surveys. *Two hours lectures and two hours field work, third term.*

102. Surveying between sophomore and junior years: For students in civil and mining engineering. This course will be given at the summer surveying camp immediately after commencement. Time will be devoted to practical field work in surveying, embracing: pacing, chaining, ranging, adjustment of instruments, angle reading, farm surveying, running land lines, dividing land, azimuth traverse, repetition traverse, differential leveling, profile leveling, triangulation, topographical surveys with transit and stadia, topographical surveys with plane table, and by other methods. Daily lectures will be given to explain work to be done, and each day's work will be calculated and plotted. *Four weeks, sixty hours a week.*

JUNIOR CLASS.

103. Theory of railroad surveying: For students in civil and mining engineering. Reconnaissance, preliminary surveys, railroad topography, location surveys, simple, reversed, and compound curves, transition curves, turnouts and crossings, construction surveys, cross sectioning, calculation of earthwork, culverts, trestles, minor structures, maps, profiles, and estimates. *Lectures and recitations five hours a week, three hours field work, and three hours office work, first term.*

104. Roads and pavements: Road economics, road location, earth roads, gravel roads, broken stone roads, miscellaneous roads, street pavements, pavement economics, street design, street drainage, curbs and gutters, pavement, foundations, asphalt pavements, brick pavements, cobblestone pavements, stone block pavements,

wood block pavements, comparison of pavements, sidewalks. *Lectures and recitations five hours, second term and first half of third term.*

105. Graphic statics: General resolution and composition of forces, force polygon, equilibrium polygon, determination of resultant of concurrent, non-concurrent, and parallel forces, determination of reactions and stresses in roof and bridge trusses, bending moments in beams and pins, center of gravity, and moment of inertia. *Lectures and exercises three hours, second term.*

106. Mechanics of materials: General conditions of equilibrium, classification of stresses, tensile stress, compressive stresses, shearing and torsional fibre, continuous beams, horizontal shear, combined stresses, eccentric loading, live loads on beams, columns, rivets and pins, properties of materials of construction, and methods of preservation. *Lectures and recitations five hours, second half third term.*

107. Structural drafting: This course is thoroughly practical, and is designed to acquaint the student with details of construction and with the practice of the principal bridge and structural companies in making shop drawings, to train him in neatness and accuracy of execution, and to prepare him for the course in structural design which he will take up in the senior year. *Five hours in drafting room, entire session.*

Surveying between junior and senior years: Complete surveys for a railroad about three miles in length, including setting all stakes ready for construction; surveys for development of water power; measurement of discharge of streams; surveying for locating, relocating, and otherwise improving public roads; other problems in higher surveying that the time may permit. *Four weeks in summer surveying camp, sixty hours a week.*

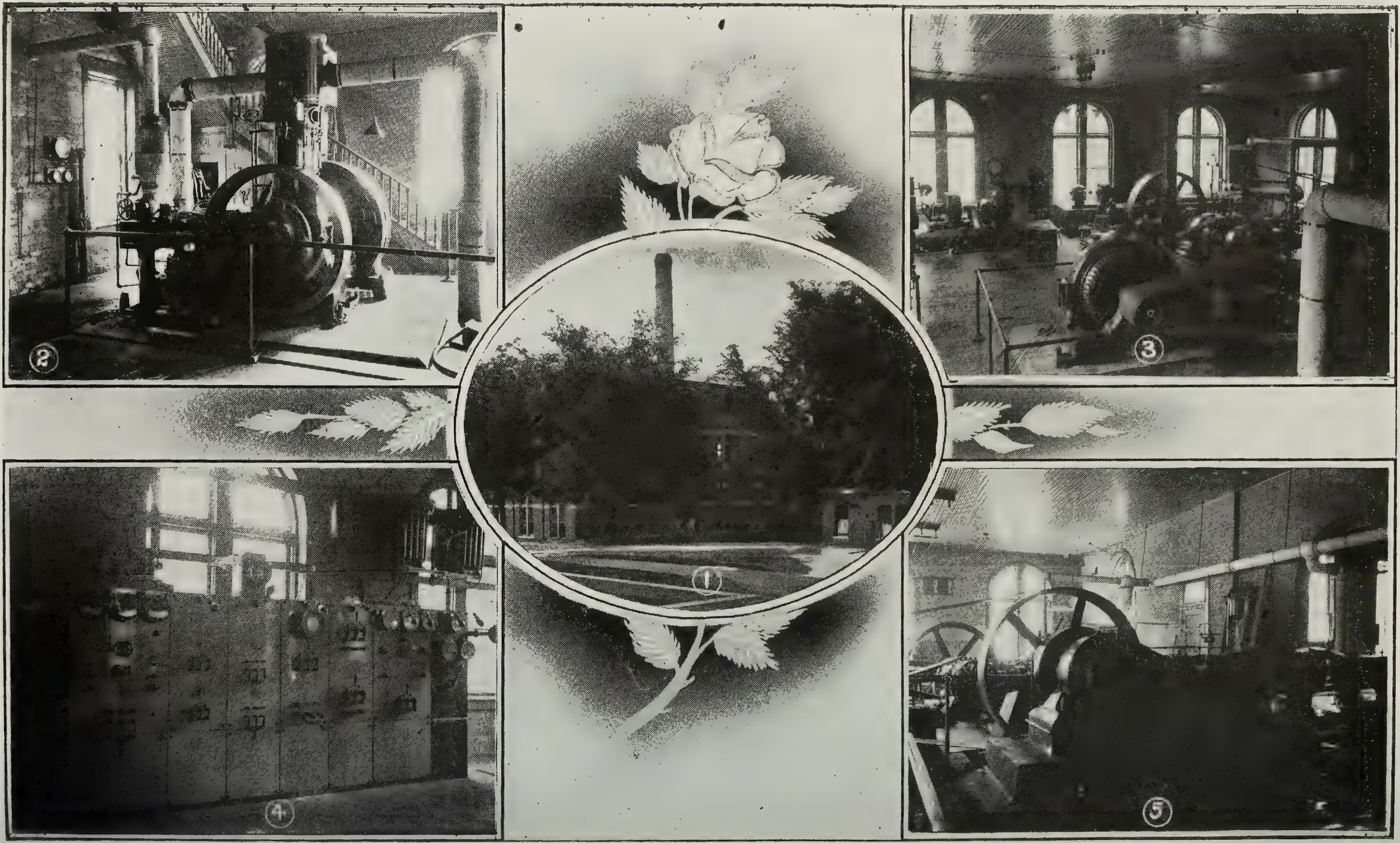
SENIOR CLASS.

108. Theory of bridge analysis: Solid-built beams and I-beams, plate girders, determination of dead-load stresses, live-load stresses in trusses, types of trusses, steel arches, suspension bridges, draw bridges, roof trusses, derricks, bridge erection. *Lectures and recitations five hours, first half first term.*

109. Masonry construction and foundations: Masonry walls, masonry dams, retaining walls, masonry arches, natural building stones, artificial stone; cements, limes, mortars, plain and reinforced concrete, foundations on land, foundations under water. *Lectures and recitations five hours, second half first term.*

110. Hydraulics: For students in civil, mining, and mechanical engineering. Hydrostatics, theoretical hydraulics, instruments, flow through orifices, flow over weirs, flow through tubes, flow through pipes, flow in open channels and conduits, flow of rivers, water supply and water power, water wheels, turbines, pumps and pumping. *Lectures and recitations five hours, second term.*

111. *Sanitary engineering*: Sanitary science, water and its



1. Power House. 2. Interior of Power House. 3. The Lighting Plant. 4. Generator and Switch Board. 5. Engine.

purification, water supply systems, sewerage systems, sewage disposal, disposal of garbage and refuse. *Lectures and recitations five hours, third term.*

113. Structural design: In this course the student devotes the required time to the practical design of engineering structures, completing designs for a plate girder railroad bridge, a steel highway bridge, a short span railway truss bridge, a roof truss, a knee braced steel building, and such other designs as the time will permit. This work may be varied to a considerable extent to fit the needs or inclinations of individual students, especially when they choose a structural subject for thesis work. *Five hours, entire session.*

114. Thesis: Each candidate for a degree must select and announce the subject of his thesis not later than January 1st, and from that time till May 1st, when it must be completed and handed in, will devote six hours a week to the collection of data and the preparation of his thesis. The thesis may consist of an original design for some engineering work, as a bridge, water supply system, sewerage system, sewage disposal plant, surveys and estimates for a railroad two or three miles long, development of a water power, or a written report showing methods and results of original investigation of some subject connected with engineering.

115. Course for graduate students: This course is arranged each year to suit the needs of students who desire to take it, and is open to those who have completed the undergraduate work in civil engineering.

ELECTRICAL ENGINEERING.

PROFESSOR DUNSTAN.

ASSOCIATE PROFESSOR HILL.

ASSISTANT SKINNER.

Courses of instruction offered:

JUNIOR CLASS.

201. Elementary theory of electricity and magnetism: A detailed study of the fundamental phenomena and laws of the subject. *Three hours, first term.*

202. Direct current machinery: Lectures and recitations on the principles of design, construction, installation, and operation of direct current generators and motors. This course treats in detail of the selection of machinery for given conditions, performance guarantees, acceptance tests for heating, regulation, efficiencies, etc., parallel running, troubles and remedies, and repairs. A large

number of carefully selected problems are assigned for solution and every effort is made to have the course cover not only the fundamental principles but also the broader engineering problems connected with the choice and use of this class of machinery. *Three hours, second term.*

203. Central station appliances and distribution for lighting and power service by direct currents: This course treats in detail of switch boards and appliances, calculation of circuits of various kinds, arc and incandescent lighting, metering, systems of charging for service, economics of generating plants. *Three hours, third term.*

204. Elementary theory of electricity and magnetism: For mechanical engineering students. This course is similar to course 201, though not so detailed in treatment. *Three hours, entire session.*

205. Electrical measurements and tests: For students in electrical engineering and mechanical engineering. The course consists of lectures and recitations upon the measurement of current, voltage, resistance, capacities, magnetic measurements, stray power, brake tests, heat runs, and related subjects. *One hour, entire session.*

206. Laboratory work: For students in electrical engineering and mechanical engineering. The course consists of galvanometer work, resistance measurements of various kinds, magnetic measurements and various tests. *Four hours, first term.*

207. Laboratory work: For students in electrical engineering and mechanical engineering. This term is devoted to the operation of direct current motors and dynamos, characteristics of direct current machinery, methods of adjusting, compounding, etc. *Four hours, second term.*

208. Laboratory work: For students in electrical engineering and mechanical engineering. Efficiency tests, location of troubles on machine and line, switch boards and appliances, and general experience in the operation of a direct current station, are given. *Four hours, third term.*

SENIOR CLASS.

210. Theory of alternating currents: Lectures, recitations, and problems upon the phenomena of alternating current circuits, inductances, etc. This course is introductory to the subject of alternating current machinery, and in order to take it, students must have a fair working knowledge of differential and integral calculus and vector algebra. *Five hours, first term.*

211. Alternating current machinery: Lectures and recitations upon alternating current generators, various methods of calculating alternator regulation, parallel running, transformers, induction motors, single phase commutator motors, synchronous motors, rotaries, etc. The course is somewhat advanced and in order to take it satisfactorily, students must have a good knowledge of the mathematical theory of alternating currents. *Five hours, second term.*

Telephone Laboratory

Electrical Laboratory

212. Calculation of transmission lines: Lectures and recitations upon line inductance and capacity, ohmic and inductive drops, voltage regulation, stresses on conductors, tower construction, and related topics. *Five hours, third term.*

213. Laboratory work: Operation of alternating current machinery, determination of data for calculation of alternator regulation, direct determination of regulation, efficiency tests, transformer connections, transformer testing for efficiency and regulation, induction motor testing, circle diagram. Brake tests, single phase induction motors, synchronous motors, V-curves, rotaries, synchronizing, etc. The work during the third term consists chiefly in the determination of data for the student's thesis. *Four hours, entire session.*

214. Electric railway engineering: A detailed study of the subject of street and interurban electric railway service covering train resistance, grades, curves, line and track, car and power plant equipment, both direct and alternating currents, sub-stations, single phase equipment, and related topics.

The course consists of recitations and lectures with constant reference to current numbers of various technical journals. *Two hours per week, second and third terms of the senior year.*

215. Telephone engineering: History and development of telephone types, designs of telephone parts, sub-station equipment, magneto and common battery switch boards, exchange equipment, telephone power plants, over head and under ground circuits, protectors, coin collectors and meters, party lines, private branch exchanges, first and intercommunicating systems, trunking, and toll boards. *Two hours, second term.*

216. Telephone laboratory: Details of telephone construction, association of parts, assembly of switchboard parts, storage batteries, tests for location of faults in cables and lines, capacity and insulation tests, details of common battery and magneto switch boards, trunking schemes, etc. *Two hours, first and second terms.*

217. Electricity and its applications: For senior class students in mining engineering and optional for senior civil engineering students. The properties and laws of electrical currents, electrolysis, direct current machinery, line calculations, electric haulage, alternating currents, power plants and their equipment. *Two hours, entire session.*

218. Electrical engineering: For senior mechanical engineering students. Direct current motors and generators, street railways, circuits, alternating currents, and alternating current machinery. This course is less detailed than the courses for electrical engineering students, but aims to cover the field in a more generalized manner. *Three hours, first term.*

219. Laboratory work: For seniors in mechanical engineering. This course is given in connection with course 218, and gives practice in the operation and testing of electrical machinery of various kinds. *Four hours, first term.*

220. Contracts and specifications: For seniors in the courses of electrical engineering and mechanical engineering. Lectures

and recitations upon engineerig specifications and the elements of the laws of contracts. Considerable time is devoted to exercises in writing specifications covering machinery and engineering projects. These specifications are read to the class and the students are required to offer criticism on each set. *Two hours, third term.*

MECHANICAL ENGINEERING.

PROFESSOR WILMORE.

INSTRUCTOR STOKES.

INSTRUCTOR THOMAS.

INSTRUCTOR MITCHELL.

INSTRUCTOR HIXON.

ASSISTANT POWELL.

The following courses are offered in this department:

FRESHMAN CLASS.

301. Shop work—carpentry: The lessons include instruction in the nature and use of tools; instruction and practice in shop drawing; elementary work with the plane, saw, chisel; the construction of different kinds of joints, timber splices, cross joints, mortise and tenon, mitre and frame work, and dove tail work, comprising the different joints used in cabinet work, and examples of framing roof trusses. Students who have had previous experience in the use of tools or who show special proficiency, are given work of an advanced character. *Six hours, one term.*

302. Shop work—wood turning: The instruction includes the nature and use of the lathe and the tools, and the lessons comprise plain, straight turning, caliper work to different diameter and lengths, simple and compound curves, screw plates and chuck work, hollow and spherical turning. *Six hours, one term.*

303. Shop work—pattern making: The course includes work in whole and split patterns in wood for solid and cored castings, and core boxes for producing the necessary cores. The characteristics of the different kinds of timber used for patterns are studied, and attention is called to allowances necessary for shrinkage and draft. The patterns are intended to be used by the students in their subsequent work in the foundry. *Six hours, one term.*

SOPHOMORE CLASS.

304. Shop work—forging: A text-book is used from which is learned something of the characteristics of the metals and the best

methods of working them. The lessons are so arranged as to make the student familiar with the handling of the tools and the successive steps in working metals by hand. Exercises in drawing, upsetting and bending, cutting, punching, and welding by various methods, are given, together with a course in steel forging, including hardening, tempering, and case hardening. *Four hours, first term.*

305. Shop work—foundry: Required of all students except those taking agriculture. The work for the most part consists of small articles, such as light machine parts and the stock pieces used for the exercise work in the machine shop. A sufficient variety is introduced for the student to acquire a good general knowledge of the usual methods and appliances used in light foundry work. Most of the work is in green sand in two part flasks, but some core work and more complicated work is introduced to illustrate the processes, as well as to furnish the castings for the advanced work in the machine shop. Instruction is given in operating the cupola, and from time to time lectures and recitations are held on the metallurgy and working of the metals used in the industrial arts. *Four hours, second and third terms.*

JUNIOR CLASS.

306. Elementary mechanics: Required of students in engineering courses. The fundamental laws of mechanical science are studied while special attention is given to the practical applications of these principles to engineering work. *Three hours, second term.*

307. Strength of materials: Required of students in the courses of mechanical engineering, electrical engineering, and mining engineering. The general properties and characteristics of cast iron, wrought iron, and steel are studied, and an elementary treatment of the strength of these materials in the forms of beams, girders, columns, and shafts is given. The text-book work is supplemented by lectures and many practical problems are worked out. *Three hours, third term.*

308. Practical mechanics: Required of students who take machine shop work. The instruction consists of recitations and lectures on general machine shop work. The construction, use, and limitations of the various machine tools, the forms of cutting tools and methods of grinding them, and the form and use of jigs and gauges, are studied, together with instruction in machine management, and time and cost keeping. *One hour, entire session.*

309. Shop work: Required of students in the courses of mechanical engineering and electrical engineering. This work is divided into two parts:

(*a*) A course of chipping and filing. The lessons comprise work on cast iron and wrought iron, and consist in chipping to line on flat and curved surfaces, key seating, filing, and finishing to line, surface filing, slotting, pin and screw filing, and surface finishing with scraper.

(*b*) A course in machine work. The materials worked on include cast iron, wrought iron, steel and brass. Exercises are given in turning to various diameters and lengths, taper turning, facing with chuck and face plate, drilling in the lathe and drill press, reaming, boring screw cutting in lathe and with taps and dies. Practice is given in working the planer, shaper, and milling machine. In the last part of the year, some work in tool making is given, such as making taps, reamers, and milling cutters. Some sort of construction or repair work for the department is always on the shop floor and students who are well advanced in their work have opportunity to gain additional practice and experience by assisting with this. *Six hours, entire session.*

310. Shop work: Required of students in the course of mining engineering and elective for juniors in the course of civil engineering. The work includes courses (*a*) and (*b*) as described in course 309 just preceding, except the amount of work required is less in proportion to the time consumed.

All shop work is done from blue prints and blackboard sketches. For the preliminary exercise work, special instruction sheets are prepared and given out to each student with the stock for the exercises. These sheets explain in detail each step in the process of producing the exercise, and are intended to supplement the individual instruction of the instructor. In the construction work it is the purpose to select some simple machine and build two or more of them on the interchangeable system. Jigs and templates are built to accomplish this result as far as possible. A system of time keeping is in force in the shop. At the end of the week each student makes out his time card, describing the work he has done during the week, and giving the number of hours spent on each job. *Four hours, entire session.*

SENIOR CLASS.

311. Power plant engineering: Required of students in the courses of mechanical engineering and electrical engineering. The work of the course consists of a study of the practical applications of steam machinery. It is believed that a thorough knowledge of the apparatus in actual practical use is the best preparation a student can have for the study of the theory. and to that end, the different types of engines, boilers, pumps, condensers, and other auxiliary apparatus are taken up and studied in detail, and the advantages of each are discussed. Extensive files of manufacturers' catalogues are kept, and the technical papers and magazines in the library are freely used in order to keep in touch with the latest and best practice in engineering work. *Five hours, first term.*

312. Thermodynamics: Required of students in the courses of mechanical engineering and electrical engineering. The subject is first studied from the ideal standpoint, and later the applications are made to hot air engines, gas and gasoline engines, and steam engines, and also to air compressors and refrigerating machines. The temperature-entropy method of analysis is used in explaining heat transfers, and in general, graphical methods are used in preference to analytical ones when they can be made to serve the

purpose equally well. In this course will be given instruction in indicator practice and the interpretation and working up of indicator diagrams from steam engines, gas engines, air compressors, and refrigerating machines. *Five hours, second and third terms.*

313. Heating and ventilating: The different methods of heating and ventilating buildings are treated. A study is made of the relative efficiency of hot water, steam, and warm air as mediums for heating different kinds of buildings, and special attention is given to the design and operations of healthful heating systems for residences. *Two hours, first term.*

314. Gas engines: This is a descriptive course, and gives attention to the construction and operations of gas engines and gas producers as used in modern power plants. The rapid development of the gas engine in recent years warrants a more extended treatment of this subject than can be given in the usual course of thermodynamics, and the above is offered as supplementary thereto. The subject will be presented by text-book, lectures, manufacturers' catalogues and drawings, and student reports on current articles of interest. *Two hours, second term.*

315. Mechanics of materials: The properties and characteristics of the materials of engineering construction are studied, and the development of the methods of calculating their strength under different conditions of stress is explained. Many problems involving the strength of beams, girders, columns, and shafts are worked out. *Three hours, first term.*

316. Materials of machines: Attention is given to the methods of manufacture and the uses of the materials which are employed in engineering construction. Special attention is given to the latest methods of manufacture of iron, steel, and cement, the work being presented by text-book, lecture, lantern slides, and manufacturers' catalogues. *Three hours, third term.*

LABORATORIES.

Junior Class.

317. Summer course: Required of juniors in the courses of mechanical engineering and electrical engineering. The work will consist in the adjustment and calibration of instruments used in engineering work, and the adjustment and operation of gas, gasoline, and steam engines. Tests will be made to determine the efficiency of mechanisms such as hoists, jack screws, gearing, belts, and other transmission devices, together with some work in valve setting and power measurement of steam engine. Complete and accurate written reports of each experiment are required. *Twenty hours per week for two weeks, beginning the week following commencement.*

Senior Class.

318. Laboratory: Required of students in mechanical engineering and electrical engineering. This work includes fuel analysis and heat determination, flue gas analysis and study of combustion, oil and lubricant testing, and valve setting and indicator card analysis. *Four hours, first term.*

319. Laboratory: Required of students in mechanical engineering and civil engineering and optional in electrical engineering. The course includes work in testing the strength of materials, as iron, steel, wood, and cement in tension, compression, and transverse loading, and the calibration of weirs, nozzles and meters, a study of the flow of water in pipes, and the testing of hydraulic motors and pumps. *Four hours, second term.*

320. Laboratory: Required of students in mechanical engineering and electrical engineering. The work includes tests of engines, boilers, pumps, gas and gasoline engines, complete power plants, and when opportunity offers, tests of commercial power plants. *hours, third term.*

GRADUATE STUDENTS.

321. Laboratory: This work is arranged to suit the work being carried by the students, and the hours are adjusted to suit their available time.

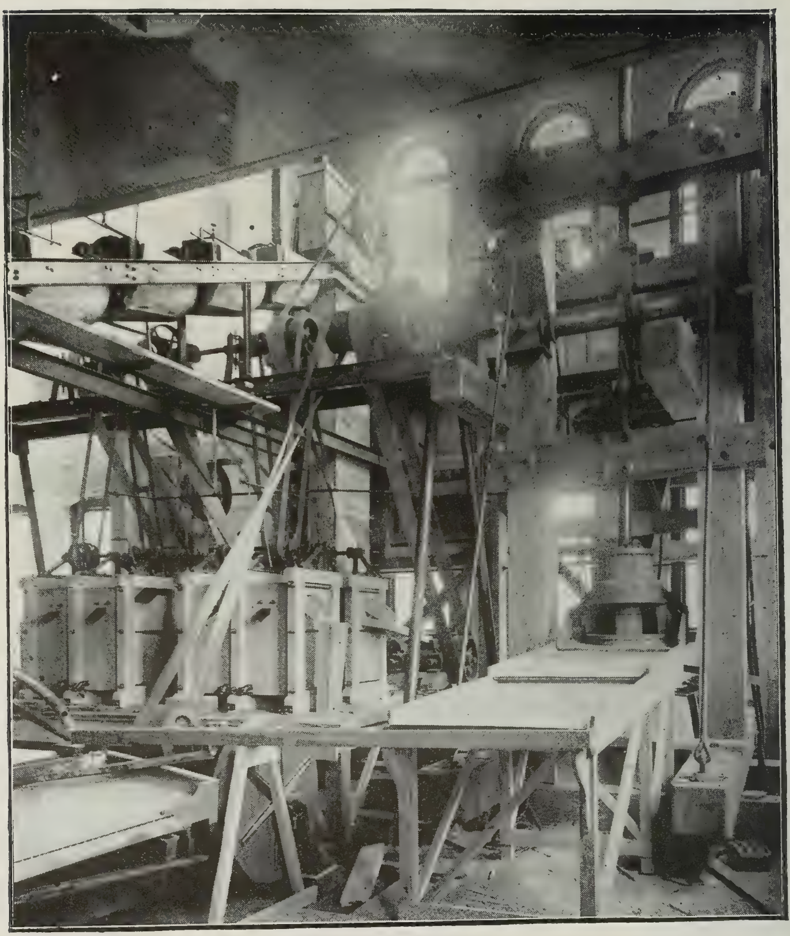
322. Steam turbines: The theory, design and structural details of the different types of modern steam turbines are studied, and complete designs are worked out. *Three hours, first term.*

323. Reinforced concrete construction: A study is made of the principles involved in reinforced concrete construction as applied to buildings in general, and particularly to buildings for power houses, shops, manufacturing buildings, and large bins for storing coal. *Three hours, second term.*

324. Power plant design and economics: The economics of power plant design, the relation of the different elements of a power plant to each other, and the conditions of maximum efficiency are studied. Plants are designed to give highest efficiency under specified conditions, and actual plants are studied to discover, if possible, sources of additional economy in operation. *Three hours, third term.*

325. Thesis: Every applicant for a degree is required to prepare a thesis and hand it in not later than May 1st, preceding the commencement at which he expects to graduate. This thesis may consist of a design, a study of some engineering problem involving a series of tests, or a study involving the collection and analysis of data and material on some engineering subject, with a statement of definite conclusions derived therefrom.

326. Manual training for teachers: Courses in elementary wood work and iron work are offered. These courses will be adapted as far as possible to the individual needs of those taking the courses, and in addition to the shop work will include lectures and conferences on the organization of courses and the equipment of shops for manual training. *Hours to be arranged.*



Mining Engineering
Ore Dressing Laboratory

SPECIAL STUDENTS.

Special students who have the necessary preparation may be admitted to any of the classes in this department. For the benefit of students who, for any reason, are not able to remain in college to complete the full course, but who wish some training in drawing and shop practice, a special two-year course has been arranged. This course is particularly recommended to the young men who contemplate entering the mechanical trades, either preceding or following the apprenticeship period. In many cases this work has been accepted as equivalent to a part of the apprenticeship period and the time of the latter shortened thereby. The drawing and mathematics are invaluable tools in any of the trades, and work in the different shops enables the apprentice to become familiar with the principles of the trades allied to his own.

For teachers who desire to secure preparation in the subjects pertaining to manual training, special shop courses are arranged. These will include such of the regular courses as are adapted to the requirements of the class, and suitable supplementary courses in wood and metal work. Lectures on the arrangement of courses and the equipment of shops for instruction in manual training are offered.

MINING ENGINEERING AND GEOLOGY.

PROFESSOR BROWN.

ASSISTANT GLOVER.

Junior Class.

401. Crystallography: For students in the courses in civil engineering, mining engineering, and chemistry and metallurgy. A thorough study is made of the crystal systems, aided by a full set of crystal models and original crystals. *Four hours, first half of first term.*

Text-book: Moses and Parsons' Mineralogy.

402. Mineralogy: For students in the courses of civil engineering, mining engineering, and chemistry and metallurgy. Half of the time is devoted to blow-piping and the determination of a large number of unknown minerals. The second half of the course is given to a study of the physical characteristics of the

minerals. A good type collection of minerals is kept in the laboratory for comparison. An effort is made to have the student become familiar with economically important ores and non-metallic minerals and the common rock forming minerals so that he can identify them at sight by the application of a few simple tests. *Four hours, two and a half terms.*

Text-books: Moses and Parsons' Mineralogy, Crosby's Tables, and Butler's Handbook of Minerals.

403. General geology: For students in the courses of mining engineering, and chemistry and metallurgy, and for seniors in the courses of civil engineering, general course, and agriculture. The course covers dynamic geology, structural geology, geomorphology, and historical geology in the order named. The lectures and recitations are supplemented by laboratory instruction and geological excursions. *Two hours, entire session.*

Text-book: Scott's Introduction to Geology (1907 revised edition).

404. Mine surveying: All general surveying as given by the civil engineering department previous to the second term of the junior year is required for this course. The work covers general surveying methods as applied to conditions prevailing at mining properties, both underground and at the surface. The student is required to work out practical problems that he will be likely to meet in actual practice. *Five hours, first half of second term.*

Text-books: Johnson's Surveying, Henck's Field Book, Coal and Metal Miner's Pocket Book, International Text-Books.

405. Coal mining: For those who have taken course 404 and its prerequisites. This course includes methods of coal mining, examination of coal properties, coal cutting machinery, timbering, track ventilation, coal washing, and coking. *Five hours, second half of second term, and third term.*

Text-books: Coal and Metal Miner's Pocket Book, and International Text-Books.

406. Drafting: The course includes free hand lettering, mapping, and detailed drawings to scale of various structures relating to mining. *Four hours, entire session.*

407. Summer course: The time will be divided between a study of gold mining and milling at Alexander City; coal mining, washing, and coking at Birmingham, and iron ore mining at Birmingham. Surveys and reports will be required. *Four weeks immediately following commencement between the junior and senior years.*

SENIOR CLASS.

408. Economic geology, non-metallic minerals: For students in the courses in mining engineering, and chemistry and metallurgy. The course is presented by lectures and recitations and includes the study of modes of occurrence, distribution, origin

and uses of coal, petroleum, limestones, salines, gypsums, fertilizers, abrasives, minor non-metallic minerals, and mineral waters. *Two hours, first term.*

Text-book: Riess' Economic Geology of the United States. (Revised.)

409. Economic geology, metallic minerals: For students who have taken course 408. The work includes a study of the ores of iron, copper, lead, zinc, gold, silver, silver-lead, aluminum, manganese, mercury, and the minor metals. *Two hours, third term.*

Text-book: Riess' Economic Geology of the United States. (Revised.)

410. Mining: Modes of occurrence and origin of the various ores and economically valuable mineral deposits. Prospecting and examination of mineral properties, including boring by different methods. Methods of opening up mineral deposits, breaking ground, supporting excavations, developing and working coal and metalliferous deposits, haulage, hoisting, drainage, ventilation, lighting, and provisions for ascent and descent. The last term is devoted to the economics of mining. This subject covers mining methods, finance, ore reserves, valuation of mining property, and other subjects relating to the practical operation of mines. *Three hours, entire session.*

411. Drafting: Drawings of mining and metallurgical machines are made from actual measurements taken. Also original work in connection with thesis. *Four hours, entire session.*

412. Laboratory course: For students in mining engineering and chemistry and metallurgy. The work includes crushing, sampling, concentration, stampmilling, amalgamation, and cyaniding. *Three hours, entire session.*

Text-books: Coal and Metal Miner's Pocket Book, and International Text-Books.

413. Methods of teaching physical geography: Especially adapted to the secondary schools of the state. In the course in general geology will be found much that is especially applicable to physical geography. It takes up a study of subterranean and surface agencies both as to their destructive and constructive processes. The results of these processes are then taken up in a study of the topography of the surface of the earth under the following heads: The geographic cycle; land sculpture; topography as determined by faults and joints; adjustment of rivers; seacoasts; mountain ranges. *Two hours a week, first and second terms.*

GRADUATE STUDENTS.

414. Graduate course: This course is offered to those who desire to pursue the subjects related to mining beyond the scope to which the two years' course limits them. The work will be arranged to meet the requirements of those desiring to take it.

ARCHITECTURE.

PROFESSOR CURTIS.

The trustees of the Alabama Polytechnic Institute established in June, 1907, a department of architecture, to comply with an increasing demand for instruction in this subject, and to encourage students to take up a profession which hitherto could be pursued only after an expensive term of study in the North.

The course as planned leading to the degree of B. S. in Architecture covers a period of four years' study, of which the first two are devoted chiefly to intentional preparation in technical and cultural subjects leading up to the special instruction in architecture beginning in the junior year. The curriculum planned for the junior and senior years recognizes that architecture must be treated as an art as well as a science, and as drawing and design are the most essential things in an architect's professional work, the greatest possible amount of time is devoted to them. As arranged the afternoons of the week are devoted entirely to drawing, and the mornings to lectures on the technical studies. The work of the architect on account of its many aspects requires not only a thorough knowledge of design and building processes, but a wide sympathy with all intellectual culture, and the student is encouraged throughout his course to improve his mind by reading literature, history, and science. The importance of descriptive geometry and its applications is emphasized by a very thorough course in the sophomore year, and this is continued during the fall term of the junior year in its special applications to architectural design and rendering.

EQUIPMENT.

The department is located in three well lighted rooms in the main building of the college. A floor space of 2,250 square feet is occupied by a lecture room 25x30, a large draughting room 30x35, and a library, office, and filing room 15x30. These rooms are well furnished with substantial drawing tables for general and free hand drawing and extra equipment; a collection of selected plaster casts of classic sculpture and architectural detail; a large number of architects' working drawings and signed plates, and several hundred examples of free-hand drawings of various sorts; a library of standard books and portfolios of plates, illustrating details of decoration and composition, 250 lantern slides and numerous photographs of notable monuments of architecture; manufacturers' samples and catalogues and general current journals devoted to architecture and the allied arts.

The following courses are offered:

SOPHOMORE CLASS.

501. Elements of architecture and drawing: For sophomores who expect to elect the course in architecture. Thorough training is given in the fundamental principles of the architectural system of drawing. This includes free hand and mechanical in the various medium's, and a careful study of lettering. The orders rendered in the form of simple compositions and frontispieces furnish the basis of the year's work. An effort is made to cultivate the student's sense of proportion by insisting on an accurate knowledge of all the details of the classic orders as classified in Ware's American Vignola. *Three hours, entire session.*

JUNIOR CLASS.

502. Theory of architecture: Lectures and criticisms over the drawing board. General theory of artistic composition in the various styles applied to architecture and ornament. The course includes an extended study of the elements of design such as vaults, arches, arcades, columns, wall treatment, stairways, etc.; principles of rendering in color, pen and ink, and pencil, planning and composition of facades and a critical survey of the monuments of architecture in all periods. *One hour, entire session.*

503. History and ornament: The recitation periods are occupied by lectures on the historic styles and monuments of architecture and their applications to modern design, supplemented by the exhibition of lantern slides, and reference to photographs and books. The student is required to consult selected articles in the library and to prepare independently several essays during each term on specified subjects, illustrated by sketches and tracings.

The course includes lectures on prehistoric architecture, general topography, history and religion of Egypt, pyramids, tombs, and temples. Architecture and ornament of the Assyrians, Chaldeans, Persians, Phoenicians, and Jews. Prehistoric Greek architecture, mythology, and racial characteristics. Origin of the orders, vases, sculpture, polychromy, optical refinements. The Acropolis at Athens, and the Parthenon. Early history of Italy and the Etruscans. The Romans,—types of buildings and construction and comparison of Greek and Roman art. Early Christian and Byzantine art. Saracenic architecture and ornament. The Romanesque and Gothic styles. The Renaissance, Germany, and Spain. Modern architecture on the continent and in the new world, and the various revivals. Colonial architecture in the United States.

These are subsequently discussed and criticised. Such personal investigations are continued into the senior year, and the student generally becomes familiar with standard books and acquires a working knowledge of historic forms. One hour each week is devoted to the closely related subject of ornament and numerous tracings and color sketches are required from the best examples of every period. *Three hours, entire session.*

504. Drawing and design: The study of design is pursued by means of assigned problems and individual and class criticism. The first term is devoted mainly to a study of the orders on a large and small scale by means of carefully composed frontispieces, and during the spring, problems are assigned which will enable the student to employ the orders in a monumental and scholarly manner. A consistent and faithful adherence to historic precedent is insisted upon. *Ten hours, entire session.*

505. Architectural graphics: This course embraces the theory of projections, intersections, and shades and shadows; perspective by the office method and isometric constructions to simplify complex perspective details; selected problems in stereotomy and stone jointing. It furnishes the basis for architectural drawing, and an equivalent of the course in descriptive geometry given in the sophomore year (Engineering 602) is an essential pre-requisite. *Four hours, entire session.*

SENIOR CLASS.

506. Drawing and design: The course is conducted by means of sketch problems occupying eight hours, testing the student's originality and use of the classified knowledge at his command; by written programs for typical buildings and group plans in the presentation of which a month or more would be allowed; by a thesis design occupying two months of careful work, with a written memoir accompanying the same. A lecture is given once a week on composition and the theory of architecture. Freehand drawing is given throughout the two years, practice being had in pencil, pen, pen and ink, charcoal from the cast, and water color. *Sixteen hours, entire session.*

507. Construction and office practice: The courses in architectural engineering and specification of building materials take up a major part of the last year's work. In addition to the lecture and text-book recitations, practical examples are demonstrated and problems worked out over the drawing board. Working drawings and details of completed buildings are carefully

studied, and scale drawings made by the student on tracing cloth and blue-printed. The student is instructed in the use of the various steel manufacturers' hand books and other pocket books.

Every other week a day is given to the solution of problems in constructive design, graphical analysis, etc., to illustrate the principles considered. Specifications are discussed and the different materials of construction, their manufacture and uses by the trades are described.

The course in specifications and building materials alternates with French. Juniors and seniors take these courses together every alternate year.

The following synopsis indicates the subjects considered in detail: In construction, foundations, masonry walls and footings, stability and supporting forces, etc. Dimensions and properties of structural shapes, tension, shearing, riveted joints, strength of posts, struts, and columns in wood, cast iron, and steel, strength of beams, stiffness and deflection, built up sections, fireproofing of buildings, reinforced concrete, roof trusses in wood and steel, graphical analysis of same and detail of joints, estimating. *Three hours, entire session.*

508. Specifications and building materials: This course includes architectural practice comprising the preparation of working drawings, specifications and superintendence. Legal relations of architect, owner, and contractor, contracts, settlement of disputes, responsibility and supervision of architect, payments, etc. Specific clauses and specification of labor, materials, workmanship, and construction. Mason's work, foundations, shoring and underpinning, limes, cements and mortars, building stones, brickwork, terra cotta, materials of fireproofing, lathing and plastering. Carpenter's work, building and finishing woods, framing, windows and doors, outside finish, standing finish, floors, stairs, heavy framing and slow burning construction, plumbing, heating and ventilating, builder's hardware and patented devices.

509. Construction and design: Students who have completed the foregoing prescribed studies leading to the degree in architecture, may pursue the study of design and construction through another year. A series of lectures is given, occupying a period of one hour a week throughout the year, the object of which is to improve the student's critical judgment and give him a more complete survey of the field of architectural composition. Certain reference readings are specified and he is required to report the results of his research. At least ten hours a week of freehand and architectural drawing are further required.

Text-book: J. Guadet—"Elements et Theorie de l'Architecture."

510. Six non-technical lectures on the history and appreciation of architecture, illustrated with lantern slides, are given at stated intervals throughout the year. This course is not restricted to students in architecture, but auditors are required to register their names at the beginning of the year. Not counted toward a degree.

SPECIAL STUDENTS.

Applicants for admission as special students in architecture must show by certificate from a recognized college or by examination in mathematics, English, and history that their preparation is equal to that given in those subjects during the freshman and sophomore years in this institution. They will also be required to take descriptive geometry in addition to their course in architecture. Draughtsmen of two years' experience in an architect's office will also be admitted as special students provided their general education is satisfactory.

MECHANICAL DRAWING AND MACHINE DESIGN.

PROFESSOR FULLAN.

INSTRUCTOR GAUM.

INSTRUCTOR THOMAS.

The following courses are offered in this department:

FRESHMAN CLASS.

601. Mechanical drawing: This course is not of a technical nature, is intended to be of general educational value to the student, and is required of students in all courses. The object of the course is to provide the student with the applications of geometry to drawing, and to train the hand and eye, with the mind. The work is principally that of linear drawing, including the most useful of the geometric constructions, arranged in progressive order. Free-hand lettering is given early in the course by means of lectures, and practice work in it is continued throughout the year. The one plane projections—axonometric and oblique—which enable the student to represent an object on a single plane, are illustrated by means of suitable models, from which the students make their drawings. In this course accuracy, neatness, and the use and care of the instruments are given special attention. *Three hours, entire session.*

SOPHOMORE CLASS.

602. Descriptive geometry: Required of all students preparing for engineering and architectural courses. The work is given by lectures, written recitations, and drafting room instruction. In this course, theory and practice are combined with the purpose of training the student in the graphical expression of ideas. The in-

struction includes problems relating to the points, straight line, and plane; to tangents and normals; to cylindrical, conical, and warped surfaces; to sections, intersections, and developments; to shades, shadows, and perspective, and is intended to develop in the mind of the student a clear concept of magnitudes in space. The lectures and written recitations are to impart principles and to permit the instructor to meet the entire class, and, with diagrams and models, supplement the work of the text. The drawing, two hours per week, consists of plates of problems, which are selected from the text-book and other sources. *Four hours, entire session.*

603. Mechanical drawing: Like course 601, of the freshman class, this course is non-technical and is of a general educational nature. The work is given concurrently with that of course 602, in descriptive geometry, and the applications of the methods of analysis given in descriptive geometry are stressed in each case where they may be applied. The subjects of the drawing plates, which are principally geometric, are required to be completely represented by the student, to enable one to read clearly what is intended to be shown. The work includes orthographic projection, sections, intersections, and developments, machine drawing, and free-hand lettering. As a check on the work in sections, intersections, and developments, and to more fully illustrate the subject, models from drawing paper of the surfaces are made by the student from the developments. This course is a prerequisite to work in the junior class in civil, electrical, mechanical, and mining engineering. *Three hours, entire session.*

JUNIOR CLASS.

604. Kinematics of machinery: Required in the courses of mechanical engineering and electrical engineering. Under this head machines are analyzed and their elementary combinations of mechanism are studied. The communication of motion by gear wheels, belts, cams, screws, and link work, and the different ways of obtaining definite velocity ratios, and definite changes of velocity in machine parts, parallel motions, and quick return motions, as well as the designing of trains of mechanisms for various purposes, together with the theoretical forms of teeth for gear wheels to transmit motion of these trains, are investigated under this subject. *Three hours, entire session.*

605. Graphic statics of mechanism: Required in course of mechanical engineering. The lectures provide a brief course in graphic statics, graphical statics of mechanism, and in the design of structures, including roof trusses for factory buildings, crane frames and girders, and watertank towers. The stresses in machines and structures are investigated by graphical methods, which are carefully checked in the beginning, by analytical proofs. This course includes the solution by graphical methods of such problems, before which analytical methods are comparatively impotent, as those which involve the friction losses in machines, and of the determination of the efficiency of mechanisms. The graphical

method is also applied to dynamics by problems in the balancing of engine crankshafts working under specified conditions. The use of manufacturers' handbooks and drafting room practice are given special attention. *One hour, entire session.*

606. Machine design: Required in the courses of electrical engineering and mechanical engineering. Instruction is given in the design of fastenings and machine parts, and in the general methods of arranging views. This course includes the design of cams, gear tooth outlines, quick return motions, and link work combinations, which supplements course 604, in kinematics. Scale drawings of simple machines are made from dimensioned sketches, which each student makes for himself from an actual machine or model. Tracings and blue-prints are made from these drawings. All the instruction is intended to familiarize the students with modern drafting room methods. *Four hours, entire session.*

SENIOR CLASS.

607. Machine design—lectures: Required in the courses of mechanical engineering and electrical engineering. These lectures are intended to cover the general instructions to the students, such as the selection of materials for different machine parts, the rules for proportion of parts to secure strength, symmetry, and cheapness of manufacture, and the best methods of making, recording and preserving the calculations incidental to the design of a complete machine. Much valuable engineering data of current nature in the form of notes are given as a supplement to the text-book. Illustrated lantern lectures on subjects related to the course, are given at intervals during the year. *One hour, entire session.*

608. Machine design—drawing: Required in the course in mechanical engineering. This is a continuation of the junior course in machine design. Original problems involving the design of complete machines to work under specified conditions, are assigned and the student develops the idea in the form of sketches. These are submitted to the instructor for criticism and are afterwards embodied in complete detail and assembly drawings. The calculations of each design are written up neatly and filed with the drawings. Special attention is given to the strength of the parts, to the harmonious and symmetrical appearance of the complete machine, and to the details as regards practical manufacture. *Six hours, entire session.*

609. Machine design—drawing: Required in the course in electrical engineering. The work given and the methods pursued are similar to those described in course 608, just preceding, but the amount of work required is reduced in proportion to the amount of time given to the subject. *Three hours, entire session.*

GRADUATE STUDENTS.

610. The work offered during the post-graduate year is an extension of that of the senior year. More of the theory of the subject is taught, more intricate machines are involved, and prob-

lems are given involving the design of a series of machines for manufacturing some specific article. The problems arising in the design of a line of machines of different sizes are also taken up, including the applications of graphical methods and the use of factors of enlargement and reduction. Special attention is given to the effect of current practice on the proportion of machine parts. Suitable text and reference books are used.

611. Methods of teaching drawing and descriptive geometry: A course in the methods of teaching drawing and descriptive geometry is given to those who wish to prepare for teaching these branches. This course includes advanced work in shape of problems, supplemented by frequent conferences with the instructor, a complete bibliography of works on the subjects, and an extended course in reading.

Those who desire to avail themselves of an opportunity to practice the teaching of the subjects, may be permitted to attend the meetings of the large classes in elementary work for the purpose of observing methods of teaching.

Those who show sufficient preparation may be allowed to assist in tutoring delinquent students and those who enter conditioned.

Special attention is given to the subject of drawing as taught in high school work.

TEXT-BOOKS.

Thompson's Educational and Industrial Drawing Series, Kenison's Mechanical Drawing, Cross' Mechanical Drawing, Phillips and Millar's Essentials of Descriptive Geometry, Anthony's Machine Drawing, James' Mechanical Drawing, Schwamb and Merrill's Elements of Mechanism, Keown's Notes on Mechanism, Spooner's Machine Design, Smith and Marx's Machine Design, Mack's Notes on Machine Design, Spangler's Graphics.

COLLEGE OF AGRICULTURAL SCIENCES

FACULTY

CHARLES COLEMAN THACH, M. A., LL. D., President,
Professor of English and Political Economy

BENNETT BATTLE ROSS, M. S., Dean,
Professor of General and Agricultural Chemistry and State Chemist.

CHARLES ALLEN CARY, B. S., D. V. M.,
Professor of Physiology and Veterinary Science and State Veterinarian.

JOHN FREDERICK DUGGAR, M. S.,
Professor of Agriculture and Director of Experiment Station.

ROGER SHERMAN MACKINTOSH, B. Agr.,
Professor of Horticulture and Forestry and State Horticulturist.

EMERSON R. MILLER, M. S.,
Professor of Pharmaceutical Chemistry.

WARREN ELMER HINDS, Ph. D.,
Professor of Entomology.

CLIFFORD LeROY HARE, M. S., M. A.,
Professor of Physical and Physiological Chemistry.

DANIEL THOMAS GRAY, A. B., M. S.,
Professor of Animal Industry.

FRANCIS ERNEST LLOYD, A. M.,
Professor of Botany.

LUTHER NOBLE DUNCAN, M. S.,
Professor of School Agriculture.

†ARTHUR McBRIDE RANSOM, M. S., M. A.,
Associate Professor of Analytical and Metallurgical Chemistry.

THOMAS BRAGG, M. S.,
Instructor in Chemistry.

ISAAC SADLER McADORY, B. S., D. V. M.,
Instructor in Veterinary Science.

PERCY FREDERICK WILLIAMS, B. S.,
Instructor in Horticulture.

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†Deceased.

WILLIAM FRANKLIN TURNER, B. S.,
Instructor in Entomology.

CHARLES S. RIDGWAY, B. S.,
Instructor in Botany.

MARION JACOB FUNCHESS, B. S.,
Instructor in Agriculture.

CHARLES S. WILLIAMSON, M. S.,
Acting Assistant Professor of Chemistry.

*JOSEPH WILDER RIDGWAY, B. S.,
Assistant in Animal Industry.

EMMETT EASON BINFORD, B. S.,
Assistant in Botany.

GEORGE HENRY MARSH,
Assistant in Pharmacy.

GEORGE WASHINGTON TAYLOR, B. S.,
Assistant in Pharmacy.

LESLIE WARREN SHOOK, B. S.,
Assistant in Animal Industry.

CHARLES FRANCIS RUSSELL, B. S.,
Assistant in Chemistry.

DEPARTMENTS

The College of Agricultural Sciences has been organized with the following departments:

Chemistry.
Agriculture.
Botany.
Pharmacy
Veterinary Science and Physiology.
Horticulture and Forestry.
Entomology.
Animal Industry.

The facilities for instruction together with laboratory equipment in each department are described under the head of "Laboratories and Facilities for Instruction" pages 10 to 22 of the catalogue.

In addition, students in the different departments of the College of Agricultural Sciences receive instruction in other departments as follows:

Mathematics.
Mechanic Arts.
Surveying.
Physics.
Geology and Mining Engineering.
Mechanical Drawing and Machine Design.
Military Science and Tactics.
English.
History and Latin.
Modern Languages.

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*Resigned.

CHEMISTRY.

PROFESSOR ROSS.

PROFESSOR HARE.

ASSOCIATE PROFESSOR RANSOM.

INSTRUCTOR BRAGG.

ACTING ASSISTANT PROFESSOR WILLIAMSON.

ASSISTANT RUSSELL.

Instruction in this department embraces the following courses of lectures; systematic laboratory work is given in connection with each course for the practice of chemical analysis and chemical research:

SOPHOMORE CLASS.

101. Course in general chemistry: This consists of a series of lectures including a discussion of the fundamental principles of chemical philosophy in connection with the history, preparation, properties, and compounds of the metallic and non-metallic elements, with the main facts and principles of organic chemistry. In this course the more common applications of chemistry to the arts and manufactures are discussed. The apparatus used for experimental illustration is extensive, containing the newest and approved improvements necessary for presenting the subject in the most attractive and instructive form. *Three hours, entire session.*

REFERENCE BOOKS.

Remsen's College Chemistry, Newth, Holleman, Roscoe and Schorlemmer, Chemical Journals.

JUNIOR CLASS.

102. Industrial chemistry:

Lectures, including discussion in detail of the process and chemical principles involved in the most important applications of chemistry in the arts and manufactures to the preparation of materials for food and drink, for clothing, shelter, illumination, cleansing, purifying, writing, printing, etc.

These lectures are amply illustrated by means of suitable specimens of raw materials and manufactured products, together with models and diagrams. *Four hours, entire session.*

Interior Chemical Laboratory

103 (a) Course in organic chemistry: Instruction in this subject embraces lectures and recitations upon the leading facts and principles of the chemistry of the carbon compounds, and includes a study of the methods of preparation of the more important compounds, their properties, and their structural and stereochemical relations. *Two hours, entire session.*

(b) A special short course offered to students in the agricultural courses. *Two hours, first term.*

TEXT AND REFERENCE BOOKS.

Remsen's Organic Chemistry, Richter's Organic Chemistry, Gatterman's practical methods of Organic Chemistry.

SENIOR CLASS.

104. Course in metallurgy: This consists of lectures and recitations upon the more important metals, such as iron and steel, copper, lead, tin, silver, gold, mercury, zinc, etc. It includes a discussion of the physical and chemical properties of the metals and their alloys, the ores and their treatment, and the processes by which the metals are obtained from the ores, with chemical reactions involved. *Two hours, entire session.*

105. Course in agricultural chemistry: This consists of lectures on chemistry in its application to agriculture, and includes a thorough discussion of the origin, composition, and classification of soils, the composition and growth of plants, the sources of plant food and how obtained, the improvement of soils, the manufacture and use of fertlizers, the chemical principles involved in the rotation of crops, the feeding of live stock, and the various operations carried on by the intelligent and successful agriculturist. *Three hours, second and third terms.*

REFERENCE BOOKS.

Snyder's Soils and Fertilizers, Snyder's Chemistry of Plant and Animal Life, Johnson's How Crops Grow, and How Crops Feed, Lupton's Elementary Principles of Scientific Agriculture, Johnson and Cameron's Elements of Agricultural Chemistry, Storer's Agriculture in Relation to Chemistry, scientific journals, reports of the United States Department of Agriculture, and the bulletins and reports of the various home and foreign agricultural departments and stations.

106. Engineering chemistry: A course of lectures given during the senior year, especial attention being devoted to the study of the construction and equipment of the chemical plants devoted to the manufacture of the more important chemical products. The study of textile chemistry will also be included in this series of lectures. *One hour, entire session.*

Excursions to various chemical and metallurgical plants during the course of the year will aid in familiarizing the student with the practical details of the operation of the leading industries.

REFERENCE BOOKS.

Thorp's Industrial Chemistry, Wagner's Chemical Technology; Muspratt's Chemistry as applied to Arts and Manufacturing, Ure's Dictionary, Watt's Dictionary, Sadtler's Industrial Organic Chemistry, Blount and Bloxam's Chemistry for Engineers and Manufacturers.

107. Course in theoretical chemistry: The more modern phases of chemical theory are given special attention. *Two hours, entire year.*

108. Course in physical chemistry: Lectures and recitations, *Two hours, entire year.*

109. Methods of teaching chemistry in the secondary schools: In this course, students who have had the necessary preliminary work in chemistry will be afforded the opportunity of taking laboratory practice in experimental chemistry for lecture purposes and for the purpose of the practical study of methods of handling classes in experimental laboratory work. Advanced students can also take the course in the history of chemistry which is provided in the senior year of the course in chemistry and metallurgy. *Hours to be arranged.*

LABORATORIES.

110. Course of systematic laboratory work: Courses of practical work in the laboratory are carried on in connection with all courses of lectures.

SOPHOMORE CLASS.

(a) All students are required to take practical laboratory work, instruction being given in the simplest methods of chemical manipulation. A portion of this time may be devoted to lectures and classwork in general chemistry. *Two hours, entire session.*

The laboratories, which are open from 9 A. M. to 5 P M. during six days in the week, are amply supplied with everything necessary for instruction in chemical manipulation in qualitative and quantitative analysis, and in the methods of prosecuting chemical research. Unusual facilities are offered to students who wish to devote their time to the spceial study of practical chemistry.

Each student on entering the chemical laboratory is furnished with a work table, a set of re-agent bottles and the common reagents and apparatus used in qualitative and quantitative analysis.

At the close of the session he will be credited with such articles as may be returned in good order; the value of those which have been injured or destroyed will be deducted from his contingent fee.

JUNIOR CLASS.

(b) The work of this course embraces the practical operations of chemical synthesis and analysis, and includes the preparation of non-metallac elements and their most important compounds, in addition to a systematic study of the metals and their compounds, their separation and identification.

SENIOR CLASS.

(c) A course in quantitative analysis, including analysis of fertilizers, soils, coals, ores, iron and steel, sugars and sugar products, feed stuffs, mineral waters, fluxes, slags, cinders, furnace gases, etc. The nature of the work is varied somewhat to suit the individual object of the student.

(d) The laboratory course provided for students in the course in mining engineering includes work in qualitative analysis during the first term. During the second and third terms, students take work in quantitative analysis, including assaying. In this latter portion of the course, especial attention is given to metallurgical analysis and the fire assay of ores of gold, silver, and other important metals. *Eight hours, entire session.*

(e) In the course of pharmacy instruction in toxicology and toxical analysis is given during the last term.

111. In addition to the laboratory work above described it is designed to give a short course of laboratory work in industrial chemistry, in which the student will apply upon a small scale the principles involved in the processes of some of the more important chemical industries.

Advanced students are afforded ample facilities for work in organic preparations and organic analysis.

TEXT-BOOKS.

In qualitative analysis—Jones, Sellers, Fresenius, Plattner.

In quantitative analysis—Fresenius, Cairns, Sutton, Rose, Blair's Analysis of Iron and Steel, Rickett's Notes on Assaying, Mitchell's Manual of Practical Assaying, Stillman's Engineering Chemistry, Lord's Metallurgical Analysis.

In agricultural chemical analysis—Official methods of the Association of Agricultural Chemists, Wiley's Principles and Practice of Agricultural Analysis.

CHEMICAL LABORATORY.

(For description of building see page 23.)

The chemical apparatus recently purchased for the laboratory consists of a full supply of the most approved instruments for practical work and investigation. The building is supplied with water and gas and every appliance required to meet the demands of modern scientific instruction and research. In addition to the apparatus usually supplied to the first-class laboratories, there have been imported a new and improved Schmidt and Hensch's polariscope, ten short-arm balances of latest pattern, Bunsen's spectroscope, Abbe refractometer, and other instruments for delicate and accurate work.

AGRICULTURE.

PROFESSOR DUGGAR.

INSTRUCTOR FUNCHESS.

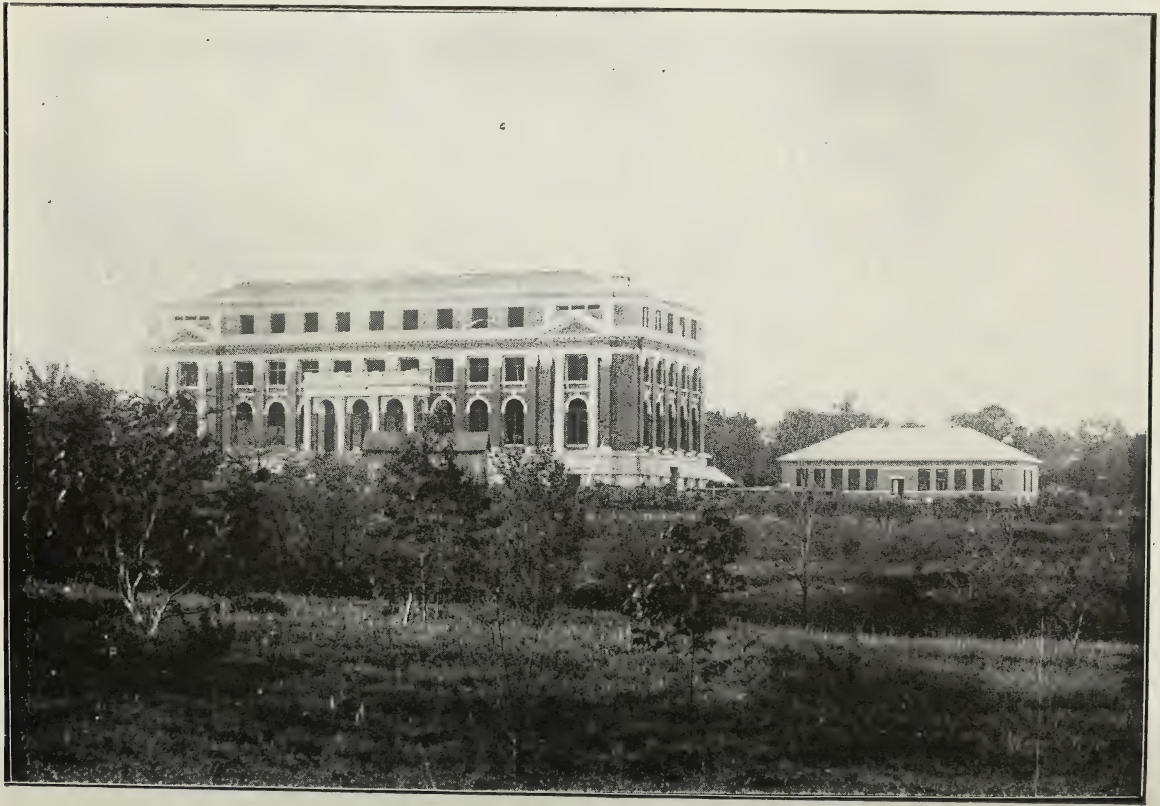
The regular agricultural course extends through four years and is intended to prepare those who complete it to become successful farmers, farm superintendents, and agricultural scientists in the various divisions of agricultural work in the U. S. Department of Agriculture and the numerous agricultural colleges and experiment stations. The studies in the regular agricultural course are so arranged that a student may obtain a thorough education while acquiring the technical training necessary to the most successful management of farming operations and of agricultural investigation or teaching. No foreign language is required for graduation in this course, but those who expect to engage in the scientific work of the U. S. Department of Agriculture or of the agricultural colleges and experiment stations, have the opportunity to study Latin, French, and German, or any one or two of these.

For the benefit of those who are unable to spend four years at college and who desire to prepare for the management of a farm, a short or two-year course in agriculture is provided. In this the student devotes his entire time to those studies having a direct bearing on his future occupation.

The following courses of instruction are offered:

FRESHMAN CLASS.

201. Introduction to agriculture: This is a short course of lectures, dealing with some of the simplest phases of agriculture. *Two hours, third term.*



Comer Agricultural Hall

SOPHOMORE CLASS.

202. Principles of agriculture: Lectures, recitations, and laboratory practice dealing with the soil and the conditions necessary to the growth of crop plants. Methods of preparing and cultivating the soil are considered. *Four hours, second term.*

203. The small grains: Lectures, recitations, and field practice on wheat, oats, rye, and barley. These plants are treated both as grain crops and as forage plants. *Two hours lectures, two hours laboratory, third term.*

JUNIOR CLASS.

204. Corn: Lectures, recitations, and field practice on the cultivation, judging, and improvement of corn. The student assists in harvesting certain experiments, becomes acquainted with a number of the best varieties, learns to select the best ears and the best plants, and notes the results of experiments in improving or breeding corn. *Two hours lectures, two hours laboratory, first term.*

205. Leguminous forage plants and soil improvement: Lectures, recitations, and field practice on this most important group of forage plants, including cowpeas, soy-beans, alfalfa, the clovers, vetches, etc. These plants are treated both with reference to their use as forage plants and as means of improving the soil. *Two hours lectures, two hours laboratory, third term.*

SENIOR CLASS.

206. Cotton: Lectures, recitations, and field practice in identifying and comparing a large number of varieties growing on the experiment station farm; judging individual cotton plants, and lectures on the cultivation, fertilization, and improvement of cotton. The collection of varieties growing on the experiment station farm usually numbers between fifty and one hundred varieties, and all of these are available for students' use. *Two hours lectures, two hours laboratory, first term.*

207. Cotton classing and machinery: This course of laboratory work consists during the first part of the term of practice in classing the commercial grades of cotton by comparing great numbers of samples procured from the offices of cotton buyers with a nearly complete set of type samples owned by this department. A part of this practice will be under the supervision of experienced cotton buyers. During the latter part of the term students are given practice in the handling and sharpening of gins and special work with other machinery used in connection with the cotton crop. *Two hours lectures, two hours laboratory, second term.*

208. Farm management: A course of lectures and practice dealing largely with rotation of crops, cost of producing different crops, systems of farming, selection of a farm, and plans for the best use of the farm or soil in which each student is most inter-

ested. This course is intended to give the student an opportunity to bring to bear on practical problems the information acquired from preceding courses of instruction in agriculture and related subjects. *Two hours lectures, two hours laboratory, third term.*

209. Investigation as a basis for a thesis: After a month spent in special reading under the direction of the professor of agriculture with a view to the selection of a subject for a thesis, the student will perform some agricultural experiment in crop production, soil treatment, or in testing farm machinery. Suitable facilities for such thesis work are provided in the fields and agricultural laboratories. In addition to conducting an original experiment the student will review the literature of agriculture to ascertain the results of similar or related experiments. It is expected that the results of some of these experiments will be worthy of publication. *Entire session.*

210. Farm machinery: Recitations, practice in setting up and operating various kinds of farm machinery, including mowers, grain drills, self binders, etc. *Two hours lectures, two hours laboratory, first term.*

211. Soil physics: Recitations intended to acquaint the student with the physical properties of soils, with the principal soils of Alabama, and especially those of the region from which each student comes. Instruction in this course will be given with a view to fitting a student to engage in the soil survey work of the U. S. Department of Agriculture, as well as to prepare him for the rational management of the soil of the farm. *Two hours lectures, two hours laboratory, second and third terms.*

212. Special crops: A course of lectures dealing with sugar cane, tobacco, rice, broom-corn, and other southern crops not treated in other courses. *Two hours, second term.*

213. Methods of teaching agriculture: This is a course of lectures and laboratory and field exercises intended to meet the needs of those who expect to teach agriculture or nature study in the common schools and agriculture in the high schools. Special attention is given to the selection of material for illustrating the principles of agriculture, and practice will be given in conducting a number of simple demonstrations. Frequent excursions are made to the fields. *Two hours, third term.*

Post graduate courses in crop production, agricultural experimentation and teaching, and farm management are offered . The exact nature of the subject will depend upon the special requirements of the student.

Students taking a four-year course in agriculture receive instruction in the various branches of animal industry and horticulture, as well as in the natural sciences bearing on agriculture.

BOTANY.

PROFESSOR LLOYD.

INSTRUCTOR RIDGWAY.

SOPHOMORE CLASS.

301. Elementary botany: General morphology and physiology of the higher plants, and a brief review of the plant kingdom, for the purpose of giving a fair idea of the more important groups of plants, and the scope of botanical study. Prerequisite for all other courses in botany. *Lectures and recitations, three hours, laboratory four hours, third term.*

JUNIOR CLASS.

302. Comparative morphology and physiology: The structure of plants from the physiological point of view. This course is designed especially to meet the requirements of students in agriculture and those who are preparing to enter teaching. *Lectures two hours, laboratory four hours, entire sesion.*

303. Plant histology: A comparative study of the minute structure of plants, with practice in the identification of the more important drugs. Especially for students in pharmacy. Simple michrotechnic. *Lectures one hour, laboratory four hours, entire session.*

304. Economic botany: General taxonomy of the plant kingdom, and special taxonomy of the spermatophytes, giving attention especially to the useful and noxious qualities of plants, poisonous, medical, and industrial. Especially for students in veterinary medicine.; open to students in agriculture. *Two hours, entire year.*

SENIOR CLASS.

305. General physiology: The general physiology of the plant and the elements of cytology. Especially for students in agriculture. *Lectures two hours, laboratory four hours, first term.*

306. Plant pathology: The more important diseases, especially of economic plants, and the methods of prevention. *Lectures two hours, laboratory four hours, second term.*

307. Phytogenesis: Variation and inheritance; the amelioration of cultivated plants. *Lectures two hours, laboratory four hours, third term.*

(NOTE.—Courses, 305, 306, and 307 are to be regarded as interrelated and as constituting the continuous work of the senior year for students in agriculture.)

308. Comparative morphology: Types of the plant kingdom studied comparatively. Designed especially for those preparing to teach. *Four hours, one of which will be used for lectures, entire session.*

309. Methods of teaching biology: The history of teaching biology, especially in America, and a study of the prevalent methods of presenting the subjects of botany and zoology more particularly in the secondary school. The course of botany for agricultural schools. Opportunity will be allowed for practical work in the laboratory. Open to other than seniors, if qualified. Designed for those preparing to teach. *One hour, entire session.*

310. Graduate courses: Will be aranged to suit the needs of students who are prepared for them.

Seminars: Students will meet the professor occasionally in the seminar room for discusions and reviews of literature.

Thesis: Students who expect to undertake research or thesis work in this department during their senior year should consult in advance as to the subject so that material may be provided for their work. Students in the general course who wish to take their elective laboratory work in botany should if possible consult about it before the end of their sophomore year.

PHARMACEUTICAL CHEMISTRY, PHARMACY, PHARMACOGNOSY, AND PRESCRIPTION WORK.

PROFESSOR MILLER.

ASSISTANT MARSH.

ASSISTANT TAYLOR.

JUNIOR CLASS.

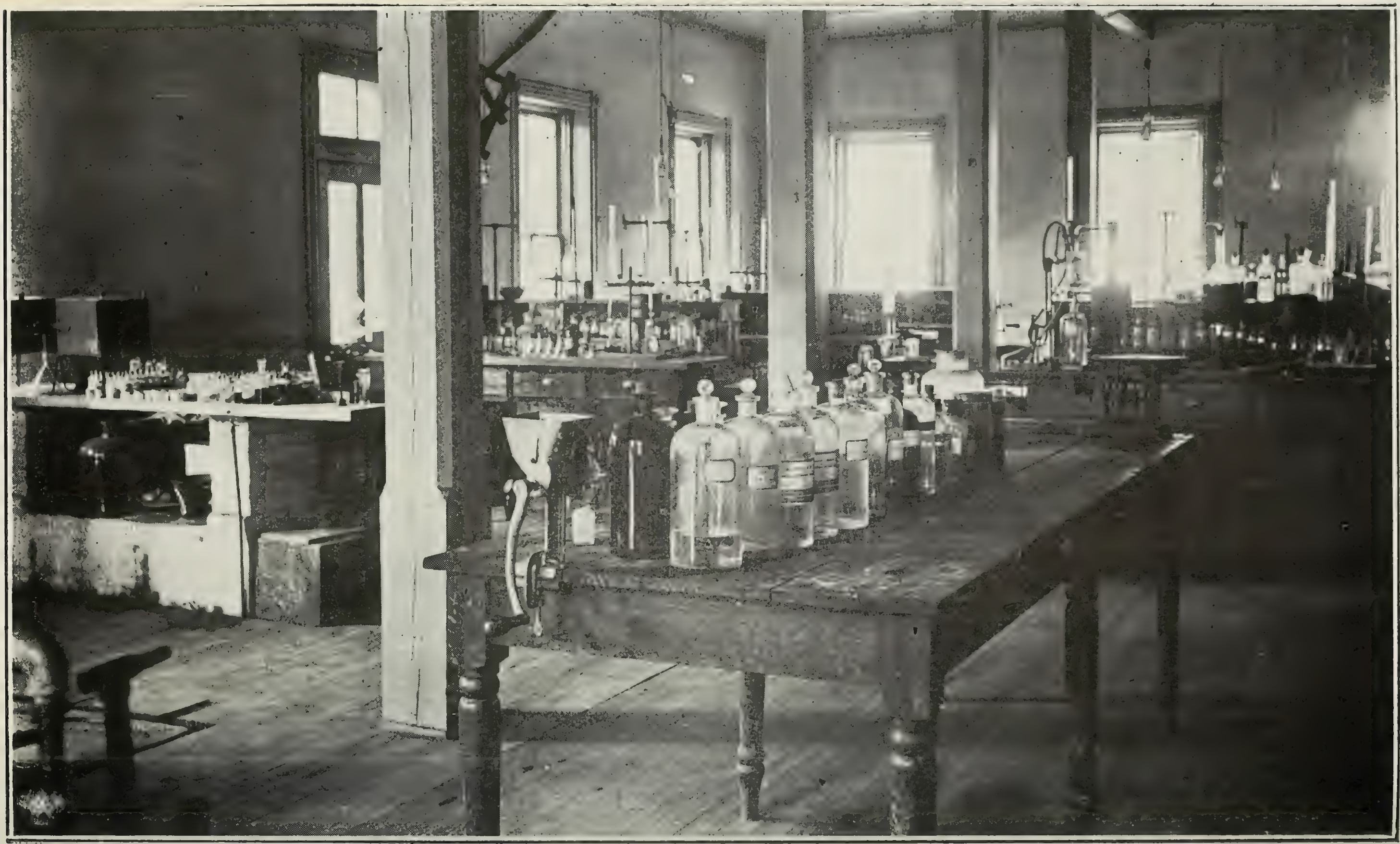
401. (a) Pharmacy: The different systems of weights and measures. Specific gravity. Pharmaceutical problems. The fundamental operations in pharmacy. Apparatus used in pharmaceutical processes. Discusions of all classes of pharmaceutical preparations. *Class work, three hours, entire session.*

(b) Laboratory: Preparation of official and non-official galenicals. *Six hours, entire session.*

402. Pharmacognosy: All official vegetable drugs studied with aid of simple and compound microscope. *Class work with laboratory work, four hours, entire session.*

SENIOR CLASS.

403 (a) Pharmacy: Official and non-official pharmaceutical chemicals, inorganic and organic, including the more important newer remedies. *Class work, five hours, entire sesion.*



Interior Pharmaceutical Laboratory

(b) Laboratory: Preparation of official and non-official pharmaceuticals, inorganic and organic chemicals. Pharmaceutical testing by pharmacopœial methods. Drug assaying. Practical exercises in identification of pharmaceutical preparations and chemicals. *Fifteen hours, entire session.*

404. Art of dispensing: The prescription. The study of several hundred original prescriptions from drug-store files. Incompatibilities. Doses. *Four hours, entire session.*

The practical work in pharmacy includes the manufacture of not less than two hundred pharmaceutical preparations and the compounding of not less than fifty prescriptions.

The work in pharmacognosy includes the study of more than 200 drugs, each of which the student is required to recognize by its physical and chemical properties, giving Latin name, common name, origin, habitat, constituents, medicinal action, and dose.

405. The work of the third year in the special course in pharmacy may be elected from the following courses:

(a) An advanced course in the manufacture of galenicals and organic and inorganic chemicals used in medicine.

(b) A course in the testing of drugs and medicinal chemicals for impurities by pharmacopœial methods.

(c) A course in pharmaceutical assaying, including the assay of alkaloidal drugs, glucosidal drugs, resinous drugs, the valuation of fixed and volatile oils, pepsin, diastase, etc.

(d) A course in water analysis.

(e) A course in milk and butter analysis.

(f) A course in physiological chemistry.

(g) A course in organic preparations.

(h) An advanced course in toxicological analysis.

(i) The presentation of a satisfactory thesis.

Any one who completes the work of the three-year special course in such a manner as to prove himself a competent analyst will be granted the degree of Pharmaceutical Chemist.

The pharmacy department of this institution is a member in good standing of the American Conference of Pharmaceutical Faculties.

TEXT AND REFERENCE BOOKS.

Caspari's Treatise on Pharmacy, Sayre's Organic Materia Medica and Pharmacognosy, Culbreth's Materia Medica and Pharmacognosy, Scoville's The Art of Compounding, Beal's Prescription Practice, Dorland's Pocket Medical Dictionary, Ruddiman's Incompatibilities in Prescriptions, Lyon's Pharmaceutical Assaying, United States Pharmacopœia, United States Dispensatory, National Dispensatory, National-Standard Dispensatory, King's American Dispensatory, Prescott's Organic Analysis, Allen's Commercial Organic Analysis, Pharmaceutical Journals, Reports of American Pharmaceutical Association.

HORTICULTURE.

PROFESSOR MACKINTOSH.

INSTRUCTOR WILLIAMS.

INSTRUCTOR PRICE.

Instruction in this department consists of lectures, recitations, and exercises in the greenhouse laboratory, orchards, and gardens of the experiment station. It is the aim to give a thorough course in the practical and scientific phases of the growing of our economic fruit, vegetable, and ornamental plants.

JUNIOR CLASS.

601. Principles of plant culture: The care of horticultural plants in general. Propagation, transplanting, pruning, and spraying. *Lectures three hours, laboratory four hours, first and second terms.*

602: Fruit growing: Special attention is given to the growing of fruits in this portion of the United States. *Three hours, second term. (Elective.)*

603. Pomology: A study of the varieties of fruits and methods of growing, etc. *Three hours, first term. (Elective.)*

604. Vegetable gardening: With special reference to the growing of vegetables for home and market. *Three hours, third term.*

605. Landscape gardening: An introduction to the subject as an art of design with practical field exercises on improvement of the grounds about farm homes and schools. A study of the trees, shrubs, vines, and other plants especially adapted to this section will also be made. *Lectures three hours, laboratory two hours. (Elective.)*

606. Spraying: A study of the spray mixtures used in controlling the insect and fungous enemies of fruits and vegetables. *Laboratory, four hours, third term. (Elective.)*

607. Greenhouse management: Care of greenhouses, hotbeds, and coldframes. The growing of greenhouse plants. *Four hours, second term.*

SENIOR CLASS.

608. Forestry: A study of the forest conditions of Alabama. Care of woodlots. Uses of wood and methods of preservation. *Three hours lectures, two hours laboratory, second term.*

609. Methods of teaching elementary horticulture. Texts, authors, experiments suitable for primary grades.

Thesis.—Each student in Group "B" must select a subject for a thesis to be presented at the end of the session.

Horticulture

Experiment Station

ENTOMOLOGY.

PROFESSOR HINDS.

INSTRUCTOR TURNER.

In accordance with the catalogue requirements the work in Entomology is taken by all senior students electing an agricultural group of courses. In addition to this senior work the subject is open to postgraduate students, who have completed the senior course satisfactorily, as an elective course leading to the degree of Master of Science. The senior work is given during the fall and spring terms only, while the post-graduate work continues during the college year. In general the instruction is given by lecture courses supplemented by collateral reading as assigned and with appropriate laboratory and field exercises.

The senior courses are designed to familiarize the students who anticipate engaging in agricultural work with the most important general facts of Entomology as an educational science and with its importance as a subject having wide economic application. So far as is possible in the brief time available, they are made famliiar with some of the most common insect pests, and with general methods of insect control. Particular emphasis is given to the importance of insect species in their effects upon health of domestic animals and of man especially. A foundation is laid during this year for post-graduate study which may fit men to fill some of the many attractive openings in this field which are quite rapidly multiplying in the South.

Excellent accommodations for the department are now provided on the first floor of Comer Hall. The combined lecture and laboratory room provides accommodations for forty or more men. In connection with the range of greenhouses there is also a large work-room for experimental and demonstrational work with insecticides and an Insectary, 16x40 feet, within which the study of insect problems may be conducted at any time under controllable conditions.

No text-book is required in this subject but reference publications are at all times available to the student. The lectures may be supplemented by appropriate laboratory work, field exercises, the insect collection, photographs, etc. belonging to the department.

701. Structure and development of insects: The general relation of insects to other animals, showing their origin, distinguishing characteristics and the principal structures upon which they are classified, are here considered. A general study is made of the structure and physiology of insects relating to fundamental principles in their life, habits, and reproduction. The most important points in the collection, mounting and preservation of insect specimens are also studied.

702. Ecology of insects: Under this heading are considered some of the most important and interesting of entomological subjects, among which are the general relation of insects to the health and welfare of mankind through the transmission of preventable diseases and the production of articles having a large commercial value. Protective devices of insects and their control through exceedingly complicated but important natural factors are among the subjects considered.

703. Important insect pests: As full a study as the limited time permits is made of the pests of greatest economic importance in the household, the orchard, garden, and greenhouse, the enemies of field crops, stored products, etc.

704. Methods in insect control. The principles of insecticide preparation and application are explained and illustrated. This work is supplemented by an exhibit of the principal insecticide materials. Practice in the preparation of the most commonly used materials is given to emphasize proper and desirable methods. The best types of spraying apparatus are shown and tested, and the student is familiarized with many of the special points in practical work. The importance of the improved methods of agricultural practice is shown and the logical basis of their effectiveness is explained.

ANIMAL INDUSTRY.

PROFESSOR GRAY.

ASSISTANT SHOOK.

Instruction in this department is given in the class room, in the laboratories, and upon the animal industry farm with the stock. Class room work in dairy instruction is supplemented and strengthened and made practical by requiring each student to work in the dairy laboratory where butter is made, where the Babcock test is used, and where the lactic acid in cream is determined, etc. While lectures are given on how to judge animals, the instruction does not stop with the lectures; the students are taken to the barn and feed-lots where animals are placed before them and each student is required to make a written report concerning the animal. The live stock provided for the students' use in studying breeds and judging animals consists of Angus, Jersey, Hereford, and Shorthorn cattle; Duroc-Jersey, Berkshire, and Poland China hogs; Southdown, Dorset, common, and grade sheep.

The department now has the complete herd books of practically all the leading breeds of live stock in America. By the use of these the student is enabled to inform himself in regard to all pedigrees and to study the different scales of points which the breeders have adopted to represent the highest types of the various breeds.

The student is given an opportunity to specialize in animal industry throughout the senior year.

FRESHMAN CLASS.

801. Breeds of live stock: The object is to study the original history of development, and characteristics of each one of the principal breeds of live stock, and to discuss the special adaptability of each breed to Southern conditions. The lecture work is supplemented, as far as possible, by representative animals of the breed under discussion. *Lectures, two hours, third term.*

SOPHOMORE CLASS.

802. Dairying: The study of the secretion, character, and composition of milk. Proper methods of handling milk and cream for consumption; Pasteurizing, sterilizing. The students are given thorough work in using the Babcock test and the lactometer, and the different acid tests, together with the ordinary tests for the purity of milk and its adulteration. They are also drilled in all the phases of butter making. *Lecture and laboratory work; two hours, first term.*

803. Judging live stock: The object of this course is to get the student familiar with the dairy and beef types of animals and to appreciate their difference in function and conformation. Work is also given in judging swine and sheep. Instruction is given largely by the use of the score card. *Laboratory, two hours, second term.*

JUNIOR CLASS.

804. Principles of feeding: The processes and requirements of the animal body are first considered, as the digestion and the utilization of food and conditions affecting them. Then the common feeding stuffs are considered and a study is made of their composition, their comparative value considered chemically and

physiologically, and with reference to their fertilizing constituents. Work is given in compounding rations for the various kinds of live stock. *Lectures; two hours, second and third terms.*

805. Herd book study: This includes a study of the various herd books with a view to becoming familiar with the pedigrees of the leading strains and families of the different breeds of live stock. The second one-half of the term is devoted to judging hogs and sheep. *Laboratory; two hours, second term.*

SENIOR CLASS.

806. Principles of breeding: This course embraces the study of the principles of breeding live stock, including the study of variation, its extent and causes; heredity from a statistical standpoint; selection; importance of fecundity, and the use, or abuse of in-breeding, cross-breeding, grading-up, with a presentation of the practical application of these principles to the breeder conditions. *Lectures; two hours, first and second terms.*

807. Practical feeding: This course consists of a series of lectures, supplemented by reference reading, upon the most profitable methods of producing, finishing, and marketing swine, beef cattle, and lambs. Feeding dairy cows and marketing the dairy products are also given consideration. *Lectures; two hours, first term.*

808. Meats: This consists of a study of the structure and composition of meats, quantity, cost, and food value of the various cuts of beef, mutton, and pork; exercises are also given in judging the carcasses of the different classes of animals. A study is made of how to home-dress and home-cure pork. Lectures are given upon the effect of feeding and breeding of the animals as affecting the value of the carcass and the quality of the meat. *Laboratory; two hours, second term.*

809. Judging horses and mules: Here the student is given an opportunity to become familiar with the various classes of horses and mules which are adapted to Alabama conditions and to study the conformation of each class. *Laboratory*; *two hours, first term.*

810. Live stock farm management: Only those seniors who are especially interested in live stock are expected to take this course. A study is made of methods of operating farms devoted chiefly to live stock production. *Second term.*

811. Dairying: This course is outlined to meet the requirements of the senior veterinary students. The student is made familiar with the Babcock tests, the use of the lactometer, the determination of lactic acid, churning and separating operations. The tests for the common adulterants are also made. *Second term.*

FIRST YEAR VETERINARY MEDICINE.

812. Live stock management: This course is outlined to meet the requirements of the veterinary students. It consists of a series of lectures on the care, housing, and management of horses, cattle, sheep, and swine. *Lectures*; *two hours, first term.*

813. Judging live stock: For the first year veterinary students. It consists in judging stock, special reference being given to horses and mules and dairy cattle. The object is to get the student familiar with the normal animal body in order that the abnormal or diseased conditions may be readily recognized. *Laboratory; two hours, third term.*

814. Feeding live stock: This course offered for the benefit of the first year veterinary and special agricultural students. The food requirements of the animal body are first briefly considered. All through the course the practical, rather than the scientific, side of feeding is emphasized. Special reference is made to feeding horses and dairy cattle. *Second term.*

Ample opportunity and encouragement is extended to those students who wish to do postgraduate work in animal industry. With the completion of the new building there will be opened up fully equipped laboratories for work in this department. Applicants for graduate work will be assigned special research work in some line of animal industry and will be aided in their line of investigation.

THE DEPARTMENT OF SCHOOL AGRICULTURE OR AGRICULTURAL EXTENSION WORK.

PROFESSOR DUNCAN.

The department of School Agriculture or Agricultural Extension Work was created in June, 1909, by the Alabama Polytechnic Institute in co-operation with the United States Department of Agriculture, Washington, D. C.

There are three phases or lines of work for the agricultural colleges:

1. The experimental or research work which is conducted on the station farm and in the various laboratories.
2. Class room and laboratory teaching for students who come to college.
3. Outside teaching or extension work.

The National Country Life Commission appointed by the President in 1908 for the purpose of taking stock of country life conditions, in order that the President might make intelligent suggestions to Congress for legislation to improve these conditions, has, as one of its three final recommendations, the following to say about extension work:

"Each state college of agriculture should be empowered to organize as soon as practicable a complete department of college extension, so managed as to reach every person on the land in its State, with both information and inspiraiton."

Extension teaching includes work along the following lines:

1. Personal acquaintanceship in such a way as to arouse interest in farming.
2. Giving information by personal correspondence and circular letters.
3. The publication of leaflets and pamphlets along agricultural and other educational lines.
4. Co-operating with and assisting various organizations and societies having for their object the improvement of agricultural conditions.
5. Assisting and co-operating with schools, aiding them in teaching agriculture, in improving school grounds and in making school gardens.
6. Arranging and directing reading courses for farmers and farmers' wives.
7. Conducting demonstrations on the farms connected with schools.
8. Running educational trains.
9. Assisting in farmers' short courses and farmers' institutes.
10. Organizing boys' and girls' Farm-Life Clubs.
11. Conducting correspondence courses for farmers.

COLLEGE OF VETERINARY MEDICINE AND SURGERY

FACULTY

CHARLES COLEMAN THACH, M. A., LL. D., President,
Professor of English and Political Economy.

CHARLES ALLEN CARY, B. S., D. V. M., Dean,
Professor of Pathology, Bacteriology, and Physiology.

BENNETT BATTLE ROSS, M. S.,
Professor of Chemistry.

JAMES POWELL COCKE SOUTHALL, M. A.,
Professor of Physics.

EMERSON R. MILLER, M. S.,
Professor of Pharmacy.

CLIFFORD LEROY HARE, M. S., M. A.,
Professor of Toxicology and Urinalysis.

DANIEL THOMAS GRAY, A. B., M. S.,
Professor of Animal Industry.

FRANCIS ERNEST LLOYD, A. M.,
Professor of Botany.

THOMAS BRAGG, M, S.,
Instructor in Chemistry.

ISAAC SADLER McADORY, B. S., D. V. M.,
Anatomy, Histology and Obstetrics.

GEORGE WASHINGTON BROWNING, V. S.,
Veterinary Medicine and Infectious Diseases.

JAMES A. WAUGH, V. S.,
Surgery and Therapeutics.

PETER F. BAHNSEN, V. S.,
Shoeing, Lameness, and Physical Diagnosis.

CINCINNATUS DECATUR KILLEBREW, M. S.,
Instructor in Physics.

*JOSEPH WILDER RIDGWAY, M. S.,
Assistant in Animal Industry and Dairying.

GEORGE HENRY MARSH, M. S.,
Assistant in Pharmacy.

GEORGE WASHINGTON TAYLOR, B. S.,
Assistant in Pharmacy.

LESLIE WARREN SHOOK, B. S.,
Assistant in Animal Industry.

CHARLES FRANCIS RUSSELL, B. S.,
Assistant in Chemistry.

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*Resigned.

DEPARTMENTS.

The College of Veterinary Medicine and Surgery has been organized with the following departments: Veterinary Medicine, Physiology, and Surgery. In addition, students in the College of Veterinary Medicine and Surgery receive instruction in other departments as follows: English, Chemistry, Physics, Pharmacy, Toxicology and Physiological Chemistry, Animal Industry, and Botany.

By direction of the United States Civil Service Commission, the College has been added to the list of accredited veterinary colleges.

Veterinary Laboratory

PHYSIOLOGY, VETERINARY SCIENCE, AND VETERINARY MEDICINE.

PROFESSOR CARY.

INSTRUCTOR MCADORY.

INSTRUCTOR BROWNING.

INSTRUCTOR WAUGH.

Lecturer Bahnsen.

Physiology and Veterinary Science.

101. Physiology: The students in the regular and special agricultural courses, in all of the pharmacy courses, in the course in chemistry and metallurgy, and in the three-year course in veterinary medicine and surgery, all study elementary physiology. The aim of the course is to teach anatomy, histology, hygiene, and sanitation. The instruction is given by lectures, demonstrations, and text-book. Text-book, Huxley's Physiology. *Two hours, entire session.*

102. Veterinary science: For students in agriculture. Lectures and chemical work in the junior year. In the senior year, the students may elect, with the consent of the professor in charge, six hours in the regular three-year veterinary course. The aim of the instruction given to the agricultural students is to teach such lessons as will enable them to prevent many diseases on the farm by correct hygiene and sanitation. At the same time, they wil be instructed in the ways and means of treating and handling the common diseases of farm animals. This work will prepare them for "first aid" treatment and emergencies as well as for the course in veterinary medicine and surgery. *Five hours, junior year; six hours, senior year.* (*Elective.*)

Veterinary Medicine and Surgery.

The three-year course in veterinary medicine and surgery leads to the degree of Doctor of Veterinary Medicine. It is the outgrowth of fifteen years' work of the department of physiology and veterinary science. Moreover, it has been established to meet the demand of the young men of the South who desire to become educated veterinarians, and for students who desire to prepare for the study of human medicine.

Equipment.

The main veterinary building has an independent gas plant and a connected sewer system. It is supplied with electric lights and water. The building contains an office, two lecture rooms, a physiological laboratory, and a museum on the first floor; on the second floor, are located two research laboratory rooms, a library and reading room, a large lecture room containing an incubator room, and all the necessary apparatus for pathological, histological, and bacteriological work.

A separate building is used as a house for small animals (rabbits, guinea pigs, pigeons, etc.) that are employed for experimental and demonstration work in bacteriology, histology, and physiology.

The anatomy division has a separate one-story brick building with good ventilation and extensive sky light. It is supplied with gas, water, and electric lights. The anatomy museum contains the skeletons of man, the horse, the ox, the sheep, and the pig, and models of the limbs and special organs of man and the horse. It is also supplied with different lots of bones of the horse and with dissected and dried limbs showing the relation and attachment of muscles. An hexagonal operating pavilion thirty-six feet in diameter has just been completed. It is supplied with water and electric lights and lockers for students.

The veterinary hospital contains five box stalls, four open single stalls, an office, and a feed room, on the first floor; a large room for storing hay, fodder, and feed, is found on the upper floor. The veterinary department has for its exclusive use about six acres of land divided into lots, pens and paddocks. In one of the lots, are located two large sheds having a capacity for accommodating one hundred and twenty-five cattle or large animals. These sheds are used for tick fever inoculation purposes and for isolation of animals affected with infectious diseases.

The three-year veterinary course students take five terms of work in the department of animal industry and dairying, one year's work in pharmacy; four terms of work in the chemical department, one year's work in botany and one year's work in physics. The facilities and equipment of these departments are excellent.

The veterinary course is especially strong in practical laboratory work.

1. In anatomy the work of dissection is continued through the first and second years and the first term of the third year. It is a well established fact that useful surgical or real anatomy can not be acquired without careful and thorough work in the dissecting room. Special stress is given to comparative anatomy of the horse, ox , sheep, pig, and dog.

2. Clinical laboratory work is also required throughout the course. The clinical work comes six days in the week and the cases presented embrace mules, horses, cattle, sheep, dogs, poultry, and hogs. The variety is such as to illustrate a large number of diseases, surgical operations, and therapeutic applications.

3. The physiological laboratory is supplied with apparatus for tests and experiments in physiology.

4. The laboratory for pathology, histology, and bacteriology is extensive, and is fully fitted with the latest apparatus. This

laboratory has been the outgrowth of sixteen years of cumulative additions. The aim is to teach students to work in the laboratory rather than to memorize the printed pages of the text-books.

5. In chemistry and toxicology the students work in one of the best of chemical laboratories.

6. In pharmacy, the students work in practical pharmacy for five hours a week for a year. In this they learn to recognize, compound, and dispense drugs.

7. The animal husbandry department affords ample facilities for practice in feeding and judging cattle, sheep, hogs, and mules.

8. The dairy department gives practical laboratory work in dairy operations and in handling and feeding dairy cattle.

9. The botanical department is well equipped and gives excellent opportunity for laboratory work.

10. The subjects in the course of study are such as are required in the leading veterinary colleges of America. The course meets the requirements of the American Veterinary Medical Association. It is our aim to have the teaching staff meet the requirements of the best standards. The length of the course is three years of nine months each.

FIRST YEAR.

103. Human physiology: Elementary human physiology. The instruction is given by lectures, demonstrations, and text-books. *Two hours, entire session.*

104. Histology: Deals with the minute anatomy of the various tissues. It includes methods of fixing, imbedding, sectioning, mounting, staining, and a microscopical study of the tissues. Histology is studied by lectures and by laboratory work. *Five hours, first and second terms.*

105. Embryology: This is a study of the development of the embryo and is designed to prepare the student for the study and practice of obstetrics. *Five hours, third term.*

SECOND YEAR.

106. Veterinary physiology, recitations: Treats of the actions or functions of the various vital organs of the animal body. Attention is also given to the laws of health and the conditions most favorable to the healthy action of the animal body. *Two hours, first and second terms.*

107. Physiology laboratory: A part of the course deals with chemical physiology and the vital processes of the organs of the domestic animals. *Two hours, third term.*

108. Bacteriology: The principles of bacteriology and chief pathogenic organisms are carefully studied. *Three hours in class room and three hours in laboratory, first term and first half of the second term.*

109. Pathology: This deals with the general pathological anatomy and histology as observed in man and the different species of animals, and a study of the cellular changes in diseased tissues and organs. *Three hours recitations and three hours in laboratory, last half of the second term and entire third term.*

110. Obstetrics: Practical work is given as cases are presented. *Two hours, first and second terms.*

111. Special surgery: This includes surgery of the head, eye, neck, chest, limbs, skin, abnormal organs, urino-genital system and castration. It consists of lectures supplemented by practical operations. *Two hours, second and third terms.*

THIRD YEAR.

112. Surgical exercises: In these exercises the student is required to perform the principal surgical operations. *Two hours, second term.*

113. Infectious diseases: This is a study of the diagnosis and preventive sanitation of the animal plagues. *Two hours first term, three hours second term.*

114. Parasites: This subject deals with the parasitic infestations of man and animal. An abundance of material is available. *Two hours, second and third terms.*

115. Meat inspection: Embraces recitations, lectures, and abattoir inspections in the smaller and larger cities of the State. *Two hours, first and second terms.*

116. Milk inspection: The course includes the study of milk adulterants, sanitary construction of dairy barns and dairy houses, conditions of cows and the diseases of dairy cattle; the feed, the water supply, the dairy cans, bottles and wagons, the disease and filth germs of milk. *Three hours, third term.*

117. Urinalysis: This course is largely laboratory work. *Three hours, third term.*

118. Toxicology: Is a study of the chemical, physical, physiological actions of poisons. The laboratory course embraces the official tests for poisons. *Seven hours, third term.*

Thesis: Development and preparation of an original theme on some subject relating to veterinary medicine and surgery, or veterinary sanitation and hygiene is required. *Four hours, entire year.*

FIRST, SECOND, AND THIRD YEARS.

119. Comparative anatomy: Based upon the descriptive anatomy of the horse. It includes lectures and dissection. The course in anatomy is continued in the dissecting room throughout the first and second years, and the first term of the third year. The work will be taken up in the following order:

(a) Osteology: Requires a thorough knowledge of the bones of the horse and the comparative variations as found in the ox, pig, dog, and sheep.

(b) Arthrology: The course consists in a study of the joints or articulations and the synovial sacs.

(c) Myology: Includes a study of the muscles with their tendons and synovial sheaths or bursae.

(d) Splanchnology: Treats of the internal organs found in the thorax and abdomen. Special attention will be given to these subjects in the horse, ox, sheep, pig, dog, and cat. It is designed both for the practitioner and meat inspector.

(e) Angiology: It treats of the blood vessels and heart and lymph vessels and glands. This is designed to meet the requirements of the practitioner and meat inspector; hence, the students must locate the lymph glands in the horse, ox, sheep, pig, and dog.

(f) Neurology: Calls forth a study of the cerebro-spinal, and sympathetic nervous systems.

(g) Special anatomy: Comprises the study of the organs of special sense, urino-genital organs, the foot, and the larynx.

120. Materia medica and therapeutics: A study of the principal drugs used in veterinary medicine, their doses, physiological actions, therapeutic uses, and prescription writing. *Third term of second year; and first and second terms of third year.*

121. General surgery: This course embraces the general prinples of surgery. *Two hours, third term of second year; and first term of third year.*

122. Clinical laboratory: Free clinics. Students are required to study each. A great variety of cases are always presented. *One to two hours each day, second and third years, and three hours on Saturday for all classes.*

123. Veterinary medicine: This deals with the principles and practice of veterinary medicine. *Three hours, second and third years.*

124. Physiology and hygiene—Teachers' course: The department can give the following line of instruction to prospective Alabama teachers:

1. Structure of human body and animals.
    (a). Study of cells, tissues, and organs.
    (b). How to use the smaller animals in teaching naked eye anatomy.
2. Physiological actions of the different parts and products of the animal and the human body. This embodies:
    (a). Functional tests.
    (b). Chemico-physiological tests.
    (c). Physico-physiological tests.
3. Hygiene, embracing instruction in personal health problems,
4. Sanitation. including health conditions of cities, homes, public buildings, farms, barns, dairies, etc.
5. Care of animals on the farm and in the city.

TEXT AND REFERENCE BOOKS.

General Chemistry—Remsen's College Chemistry.

Physiology Recitations—Hough and Sedgewick, and Lectures.

Physiology Laboratory—Fish's Elementary Exercises in Physiology; Smith's Manual of Veterinary Physiology.

Physics—To be Announced in September.

Anatomy—Chauveau's and Sisson's Comparative Anatomy.

Clinical Laboratory—Blank Books or Note Books.

Histology—Piersol, Stohr, Schafer, Bailey, and Lectures.

Embryology—Hertwig-Mark; Minot. Lectures.

Livestock Management—Lectures and text-books to be announced later.

Feeding Livestock—Smith; Henry; Jordan.

Animal Husbandry—Craig, and Lectures.

Botany—Lectures; Pammel's Poisonous Plants.

Pharmacy—Lectures; and Stevens.

Bacteriology—Lectures; Moore's Lab. Guide, and Jordan's Bacteriology.

Pathology—Ziegler; Kitt.

Obstetrics—Williams; DeBruin; Fleming; Dalrymple.

General Surgery—Lectures and Frohner.

Speciad Surgery—Lectures; Moeller; Merillat; Frohner.

Surgical Exercises—W. L. Williams.

Materia Medica and Therapeutics—Wilcox; Winslow; Fish; Quitman.

Veterinary Medicine—Law. Vols. 1, 2, and 3, Moussu; Friedberger and Frohner.

Infectious Diseases—Moore—Law—Vol. 4.

Parasites—Neuman—Law. Vol. 5; Stiles; Kaupp.

Milk and Meat Inspection—Van Slyke; Conn; Ostertag; Peters; Edlemann-Eichhorn.

Toxicology—Tanner; Fish.

Urine Analysis—Fish.

Restraint of Animals—White.

ORGANIZATIONS.

CADET BAND.

A. L. THOMAS, Bandmaster.

Three musical organizations are now maintained—the band, the orchestra, and the glee club.

Membership in all organizations is open to any student, provided, of course, the applicant has talent.

The band is maintained by the college for students who desire to develop their musical ability and for those who wish to learn music. It furnishes music for all college exercises and takes part in military manoeuvres. Regular and individual instruction is given free of charge during the first term, embodying the rudiments of music and general musical information in conjunction with the practical instruction on the instrument. Public concerts are given weekly during the second term, and engagements elsewhere are usually arranged.

A gold medal is given each year by the bandmaster to the member who makes the best record.

The orchestra is an organization for musical recreation, and members are carefully selected by the director, according to their musical ability.

The glee club, comprising the quartet, chorus, and stringed instruments, is a student organization.

The services of a musician are secured to assist with the instruction and training of the quartet and chorus. Two concerts are given at the college and a concert tour is usually arranged during the third term.

YOUNG MEN'S CHRISTIAN ASSOCIATION.

This association is regularly organized and a suite of well furnished rooms on the second floor of the library has been set apart for its exclusive use. Through its weekly meetings it exerts a wholesome Christian influence among the students.

Students are advised to unite with the association when they enter the college.

The ladies of the different churches in Auburn are organized into an auxiliary association to the Y. M. C. A. of the college.

The following are the officers af the association:

Eugene Leon Caton	President
L. Llewellyn Glover	Vice-President
Thomas Morris Francis	Treasurer
Vergil Pettus Atkinson	Recording Secretary

LITERARY SOCIETIES.

There are two literary societies connected with the Institute—the Wirt and Websterian. Each has a hall in the main building.

These societies hold celebrations on the evenings of Thanksgiving day and 22nd of February. A gentleman, selected by the faculty, is invited to deliver an address before the literary societies at Commencement.

To encourge the literary societies the trustees have directed that a medal be awarded on Commencement Day to the member of each society who is both efficient and regular in attendance, and who is the best debater. The method of selection is determined by the faculty.

SOCIETY OF THE ALUMNI.

The annual alumni oration is delivered by a member of the society in Langdon Hall on Alumni Day, Tuesday of Commencement week.

OFFICERS.

A. E. Price, '80	Orator
W. F. Feagin, '92, Montgomery, Ala.	President
R. D. Webb, '97, Auburn, Ala.	Secretary and Treasurer

Vice-Presidents.

John V. Denson, '05	Opelika, Ala.
R. C. Smith, '91	Opelika, Ala.
Champe S. Andrews, '94	New York City
H. B. Park, '02	LaGrange, Ga.
Levi Wilkinson, '86	New Orleans, La.
Jno. Rush, '99	Mobile, Ala.
F. L. Tate, '97	Wetumpka, Ala.
B. B. Ross, '81	Auburn, Ala.
W. K. Terry, '99	Birmingham, Ala.

R. apC. Jones, '87	Selma Ala.
C. N. Ousley, '81	Fort Worth, Tex.
C. W. Ashcraft, '88	Florence, Ala.
L. W. Wharton, '01	Gadsden, Ala.
D. J. Parker, '01	Carbon Hill, Ala.
Wm. M. Williams, '96	Montgomery, Ala.
Thos. Bragg, '01	Auburn, Ala.
J. E. D. Yonge, '02	Pensacola, Fla.

ENGINEERING SOCIETY.

All students in the courses of engineering and architecture are eligible for membership in the Engineering Society. Meetings are held twice a month, and the chief purpose of the society is to promote personal fellowship among the members, and closer affiliation with practical engineers. Prominent engineers in all lines are invited to address the society from time to time upon subjects connected with their work. At other meetings the program is supplied by the student members, thus giving apportunity for the students in one department to become somewhat familiar with the problems met with in other lines of engineering.

For the present, the meetings are held in Langdon Hall, but it is expected to provide suitable quarters for the society in the new W. L. Broun Engineering Hall, which is being erected. No regular dues are required of the members, but an occasional assessment is made to cover necessary expenses.

OFFICERS.

J. W. Powell	President
L. I. Wallin	Vice-President
J. W. Bivins, Jr.	Vice-President
J. C. Smith	Secretary
C. R. Hixon	Treasurer

AGRICULTURAL CLUB.

The Agricultural Club was organized November 23, 1907. All students interested in agriculture and the agricultural sciences are eligible for membership. The members of the Agricultural Faculty take an active part in the work of the club. Meetings are held once a week, and an effort is made to promote interest in all lines of agriculture, to develop a spirit of good fellowship among the students of the course, and to bring them in contact with prominent workers of the science as opportunity offers to present them on the regular program.

Meetings are held in the auditorium of Comer Agricultural Hall.

OFFICERS.

W. F. Murphy.................................President
D. J. Burleson..........................Vice-President
H. F. Lowe........................Secretary and Treasurer

MISCELLANEOUS.

GYMNASIUM AND ATHLETIC FIELD.

The gymnasium is situated at the west end of the athletic and drill grounds, and contains one room, 80x40 feet, with strong beams above for fastening the usual fixtures.

It is equipped with Spalding's gymnasium apparatus and is open to all students at stated hours, under the care of an officer.

The athletic field has a quarter-mile cinder track and ample space for football, baseball, and general athletics.

DRAKE ATHLETIC FIELD.

A new athletic field, named in honor of the Surgeon, Dr. J. H. Drake, has been provided for baseball, football, and track athletics. It is situated on the experiment station grounds near the gymnasium. It will be gradually beautified and equipped with necessary buildings and accommodations.

DISCIPLINE REGULATIONS.

The government of the college is administered by the president and faculty in accordance with the code of laws and regulations enacted by the trustees.

Each student upon entering is required to sign his name in the matriculation book and pledge himself to obey the rules and regulations of the college.

O. D. Smith Hall

All students are required to wear the prescribed uniform.

Attention to study and punctuality in attendence on recitations and all other duties are required of every student. Students are prohibited from having in their possession arms or weapons not issued for the performance of military duty, and also from using or causing to be brought into the college limits, intoxicating liquors.

Students are not permitted to participate in any public entertainment, or game, without previously obtaining the consent of the faculty.

No student will be permitted without the approval of his parent or guardian, to take part in a public game of football.

No student who has failed in two or more subjects will be permitted to be absent from college for athletic contests or other purposes.

(a) Every absence from recitation or examination is graded zero.

(b) When the grade of a student is lowered by reason of absence for which satisfactory excuse can be rendered, a special re-examination may be subsequently granted, and the grade made on the special re-examination alone is substituted for that previously received.

(c) Only sickness, as reported by the surgeon, or absence by reason of family sickness, or official or collegiate business, will constitute a satisfactory excuse for granting a re-examination.

When a student is called away from college by his parents for reasons other than those specified above, his zeroes for absence are not removed.

The term grade of a student is the average of his daily sessional and term examination marks, found by giving due weight to the term examination.

Privates of the senior class in full standing who are candidates for graduation may be excused by the president from all military drills, and also students over twenty-one years of age at *the time of entering college* that are permitted to devote their time to one special study, as chemistry, agriculture, pharmacy, or engineering, provided the time devoted to drill is spent by them in laboratory work.

No student can remain an officer who receives during the session more than one hundred demerits.

BOARDING.

The students board almost entirely with families of the town of Auburn, and thus enjoy all the protecting and beneficial influences of the family circle.

For each house an inspector is appointed, whose duty it is to report those who are guilty of any violation of order. The report of the inspector is made to the commandant at stated intervals.

Students, after selecting their boarding houses, are not permitted to make changes without obtaining permission from the presiident, and this permission is given only at the close of a term, except for special reasons approved by the parent.

MILITARY DRILL.

There are three regular military drills each week, and all undergraduate students, not physically incapacitated to bear arms, are required to engage in these exercises; privates of the senior class are exempt.

The drills are short and the duty involves no hardships. The military drill is a health-giving exercise, and its good effects in the development of the *physique* and improvement of the carriage of the cadet are manifest.

RELIGIOUS SERVICES.

Religious services are held every morning in the chapel.

All students, unless excused on the written request of parents for religious scruples, are required to attend these exercises, and also to attend the church of their choice on Sunday morning.

Opportunities are also offered for attending Bible classes every Sunday.

DISTINCTIONS.

Distinctions are awarded in the different subjects of each class to those students whose grade for the entire year is above ninety per cent.

Certificates of distinction are awarded in public on Commencement day to those who obtain an average of ninety per cent. in all the prescribed studies of a regular class; and also to those who obtain three distinctions in the freshman class, four in the sophomore class, five in the junior class, and six in the senior class; provided they have satisfactorily passed all the regular examinations of that session, and have not received forty demerits during the year.

A distinction is not given in the senior class if the average grade in any one subject is less than 75 per cent.

HONORS.

Members of the senior class who attain distinction at the final examinations with an average grade, in the subjects required, of 95 per cent. are published as

GRADUATES WITH HIGHEST HONOR.

Those who attain distinction with an average grade of 90 per cent. and less than 95 per cent. are published as

GRADUATES WITH HONOR.

Those who attain less than 90 per cent. and more than 60 per cent. are published as *Graduates*.

Students of the classes lower than the senior who attain distinction with an average grade in the required subjects of 95 per cent. are published in alphabetical order as having attained *Highest Distinction.*

RECORDS AND REPORTS.

Daily records of the various exercises of the classes are kept by the officers of instruction.

At the close of each term and at regular intervals reports giving the grade made by each student are sent to the parent or guardian.

EXAMINATIONS.

Written examinations on the studies of the half-term are held by each professor during the months of October, February, and April. Each examination occupies one hour.

At the end of each term written examinations, or written and oral, are held on the studies passed over during that term.

Special examinations are held only by order of the faculty, and in no case will private examinations be permitted.

Students falling below the minimum grade at the final examinations can be promoted to full standing in the next higher class only on satisfactory examinations at the opening of the next session.

It is required that every student who enters the college shall remain through the examinations at the end of the term. Leaves of absence and honorable discharges will, therefore, not be granted within three weeks of the examination, except for providential reasons.

SCHOLARSHIPS—PRIZES.

The following scholarships and prizes have been established:

THE WILLIAM LEROY BROUN MEMORIAL SCHOLARSHIP OF $170, established by the Alumni Society in memory of the late distinguished president of the Institute.

THE LIGON SCHOLARSHIP OF $170, established by Col. R. F. Ligon, Montgomery, Ala.

THE THOMAS SCHOLARSHIP OF $170, established by Judge William H. Thomas, Montgomery, Ala.

THE BALL SCHOLARSHIP OF $170, established by Mr. Fred S. Ball, Montgomery, Ala.

THE DUNKLIN SCHOLARSHIP OF $600, established by Mr. and Mrs. J. C. Street, Opelika, Ala., in memory of Prof. J. T. Dunklin, formerly professor of Latin in the college.

THE 1908 SCHOLARSHIP OF $150, established by the Class of 1908.

THE ALICE CARR SCHOLARSHIP OF $180, established for young women by the late Miss Alice Carr, Auburn, Ala.

A scholarship has been established for worthy musicians who are in need of assistance in defraying their college expenses.

The scholarships enumerated above are loan scholarships, granted to worthy young men and women, to be returned after graduation.

THE ROBERT E. LEE MEMORIAL SCHOLARSHIP OF $100, an annual donation for the son of a Confederate veteran, established by the Children of the Confederacy of Alabama under the auspices of Mrs. Mary G. Pickens.

The above named scholarships and ten other scholarships are administered by the Alumni Society. (*For information address R. D. Webb, Secretary.*)

THE ORATORICAL PRIZE, medal to that member of the junior class who composed and delivered the best oration on junior class day of Commencement.

1909, *William Carter Oliver,* Texas.

THE ORATORICAL PRIZE, for the Annual Inter-Literary Society contest, February 22.

1910, *Milner Hubbard Eskew,* Dallas County.

SOPHOMORE MEDAL IN DECLAMATION for Annual contest, May 1st.

1909, *Richard Fuller Sams,* Georgia.

PRIZE FOR BEST DEBATER, a medal given annually by the Board of Trustees to the best debater in the Wirt and Websterian Literary societies each.

1909, Websterian Society, *David Jasper Burleson,* Marion County; Wirt Society, *James Arthur Parrish,* Randolph County.

THE THOMAS ESSAY PRIZE, a gold medal offered by Judge William H. Thomas, of Montgomery, Ala., for the best essay by any undergraduate student of the college. The essay must be written under the supervision of the department of English.

1909, *Miss Hattie Finley,* Blount County.

MUSIC MEDAL.

1909, *Howard Clifford McGregor,* Jefferson County.

BATTALION MEDAL, for best drilled soldier.

1909, *Chandler Cox Yonge,* Florida.

PRIZE FOR BEST DRILLED COMPANY, a sword given by Board of Trustees.
1909, *Julius Trimble Pearson,* Montgomery County.

LIBRARY.

Librarian, JAMES R. RUTLAND.

Assistant Librarian, MISS ANNE O. SHIVERS.

A beautiful Carnegie library building of stone and pressed brick has been erected. The reading room is 80x40 feet, and the building is equipped with every convenience. It is lighted by electricity and heated by steam. The capacity of the stack room is sixty thousand volumes. The library now contains 23,974 bound volumes, including valuable reference and scientific books, with select editions of standard authors, and others suitable for students, carefully and recently selected. It is kept open eight hours daily for the use of students as a reading room and is thus made an important educational feature.

THE O. D. SMITH COLLECTION.

The library of the late Prof. O. D. Smith has been presented to the college by Mrs. O. D. Smith, and is preserved as a memorial to his long and distinguished services to the college.

THE F. D. PEABODY MEMORIAL ROOM.

Through the generosity of Mr. George Foster Peabody, New York City, an annual fund of fifty dollars, income from a permanent investment, is available for the purchase of books and furniture for the "F. D. Peabody Memorial Historical Seminar." F. D. Peabody, Esq., was a distinguished graduate of the Class of 1876.

MUSEUM.

The museum occupies a large room in the third story of Main Building. It is provided with suitable cases and is equipped with valuable specimens and models of an instructive character.

EXPENSES.

There is no charge for tuition for a resident of Alabama.

Incidental fee, per session	$ 5.00
Library fee, per session	2.00
Surgeon's fee, per session	5.00
Laundry fee, per session	12.50
	$24.50

These fees are payable on matriculation. *By order of the trustees no fees can be remitted.*

Board, including lodging, fuel, and lights, is furnished at $12.50 to $15.00 per month.

For a non-resident of the state there is a charge of tuition of $20.00 per session, payable on matriculation, in addition to the annual fees, payable by all students.

The necessary expenses for a session, not including uniforms or books, are, for a resident of Alabama, as follows:

College fees	$ 12.00	$ 12.00
Laundry fee	12.50	12.50
Board, lodging, fuel, and lights	112.50	135.00
Total	$137.00	$159.50

By special arrangement with the college authorities, Mrs. M. L. Mitchell and Mr. B. T. Blasingame will accommodate students with board, lodging, fuel, etc., for $9.50 per month.

By boarding at one of these houses, the necessary expenses may be reduced to $106. 50 per session. This estimate does not include the cost of the uniform, $15.00, nor of books, say from $5.00 to $15.00, or the laboratory fees in the higher classes, $5.00.

LABORATORY FEES.

For each student in the junior or senior laboratory in pharmacy, chemistry, electrical, or mechanical engineering, a fee of $5.00 per session is required for each department. This fee is payable *on admission to the laboratory,* and is not remitted. In the department of veterinary medicine, a dissecting fee of $10.00 is charged.

Special students in laboratory work will pay additional fees for each separate division of work, and will be charged with all material consumed in experiments

NON-RESIDENT STUDENTS.

Tuition for students, not residents of Alabama, is $20.00 per session, unless remitted by the trustees to worthy students upon the recommendation of the faculty.

The remission of this tuition fee to non-resident students will be granted in the form of a free scholarship for the succeeding year to those who obtain a distinction the preceding year, or who, by reason of merit, are deemed worthy.

This tuition for non-residents is remitted to sons of ministers of the gospel.

HONOR SCHOLARSHIPS.

The following non-resident students were granted, each by reason of special merit in conduct and scholarship during the session of 1908-09, an honor scholarship, which exempted from tuition fees:

Clarence Pax Andrew	Georgia
William Wrenshall Alexander	Missouri
Henry Wells Brooks	Georgia
Charles Dean Chitty	Georgia
Louis Breitenbach Ehrlich	Georgia
Henry Grady Ezell	Tennessee
Thurston DuPuis Futch	Florida
William Davis Hall	Georgia
Covington Drane Jenkins	Georgia
Roy Miller Lilly	Georgia
Grafton Lothrop	Texas
Milton Lothrop, Jr.	Texas
William Carter Oliver	Texas
Thomas Nimmons Powell	Georgia
Charles Edward Sauls	Georgia
Richard Fuller Sams	Georgia
Lindsey Irwin Wallin	Georgia

UNIFORMS.

A uniform of cadet gray cloth is prescribed, which all undergraduate students are required to wear during the session. The uniforms are made by a contractor, and are of excellent cloth manufactured at the Charlottesville mill. A suit, including cap, costs at present $15.00. It is neat and serviceable, and less expensive than ordinary clothing.

CONTINGENT FEE.

A contingent fee of five dollars is required to be deposited by each student on matriculation to cover any special or general damage to college property for which he may be liable. General damages are assessed on the body of students.

At the close of the session the whole of the contingent fee, or the unexpended balance, is refunded to the student.

AMOUNT OF DEPOSIT.

Fees to be paid on entrance:

Incidental	$ 5.00	
Library	2.00	
Surgeon	5.00	
Contingent	5.00	
Uniform	15.00	
Laundry fee for session	12.50	
For a resident of Alabama	$44.50	—$44.50
Tuition non-resident		20.00
For a non-resident		$64.50

Besides the above, the student should deposit with the treasurer enough to pay for books, one month's board, incidentals, amounting to say $27.50. Hence, a resident of Alabama should deposit with the treasurer $70.00; a non-resident, $90.00. For a student entering after January 1st, the deposit for laundry fee is seven dollars ($7.00).

FUNDS OF STUDENTS.

Parents and guardians are advised to deposit with the treasurer of the college all funds desired for sons or wards, whether for regular charges or college fees or board, or for any other purpose. It is the duty of this officer to keep safely all funds placed in his hands, and to pay all expenses incurred by the students, including board, uniform, books, etc.

The college cannot be held responsible for the expenses of a student unless the funds are deposited under specific instructions from the parent or guardian to the treasurer. No student should be permitted to have a large amount of pocket money, as it brings only trouble and encourages idleness.

THESIS.

Each applicant for a degree is required to write and submit to the faculty a thesis, or oration, and read or deliver the same at Commencement, if required by the faculty.

There may be presented, with the approval of the professor in charge, a carefully written report of special work done in a laboratory, showing independent investigation and discussion of some subject.

It must be given to the Professor of English by the first of May. The subject must be submitted for approval by January 1st.

SURGEON.

The surgeon is required to be present at the college daily, to visit at their quarters the cadets that are reported sick, and give all requisite medical attention without other charge than the regular surgeon's fee, paid on entering the Institute.

An infirmary has been established, and will be properly equipped.

LOCATION.

The Institute is situated in the town of Auburn, fifty-nine miles east of Montgomery, on the line of the Western Railroad.

The region is high and healthful, noted for its general good health and freedom from malaria, having an elevation of eight hundred and twenty-six feet above tide-water. By statute of the State the sale of spirituous liquors and the keeping of saloons of any kind are forbidden.

ACADEMIC YEAR.

The academic year for 1910-1911 commences on Wednesday, September 7, 1910, and ends on Wednesday, June 7, 1911, which is Commencement Day.

It is divided into three terms: The first term extends from the opening of the session to Wednesday, December 21st; the second term begins Tuesday, January 3rd, and ends March 26th; the third term continues to the close of the session.

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CALENDAR 1911-12

Session Begins	Wednesday, Sept. 6, 1911
Examination for Admission	Wednesday, Sept. 6, 1911
First Term Begins	Wednesday, Sept. 6, 1911
Mid-Term Examinations	Oct. 30-Nov. 1, 1911
Literary Society Celebration—Thanksgiving Day	Nov. 30, 1911
First Term Ends	Wednesday, Dec. 20, 1911
Second Term Begins	Wednesday, Jan. 3, 1912
Mid-Term Examinations	Feb. 8-10, 1912
Senior Class Exercises	Thursday, Feb. 22, 1912
Literary Society Celebration	Thursday, Feb. 22, 1912
Second Term Ends	Saturday, March 23, 1912
Third Term Begins	Sunday, March 24, 1912
Mid-Term Examinations	April 18-20, 1912
Senior Thesis Reported	Saturday, April 27, 1912
Sophomore Class Exercises	Wednesday, May 1, 1912
Field Day	Wednesday, May 1, 1912
Final Examinations Begin	Tuesday, May 21, 1912
Commencement Sermon	Sunday, June 2, 1912
Annual Meeting of Trustees	Monday, June 3, 1912
Junior Class Celebration, 10 A. M.	Monday, June 3, 1912
Military Exercises, 4 P. M.	Monday, June 3, 1912
Festival of Lights, 8 P. M.	Monday, June 3, 1912
Alumni Day	Tuesday, June 4, 1912
Military Exercises, 5 P. M.	Tuesday, June 4, 1912
Senior Class Celebration, 8 P. M.	Tuesday, June 4, 1912
Commencement Day	Wednesday, June 5, 1912

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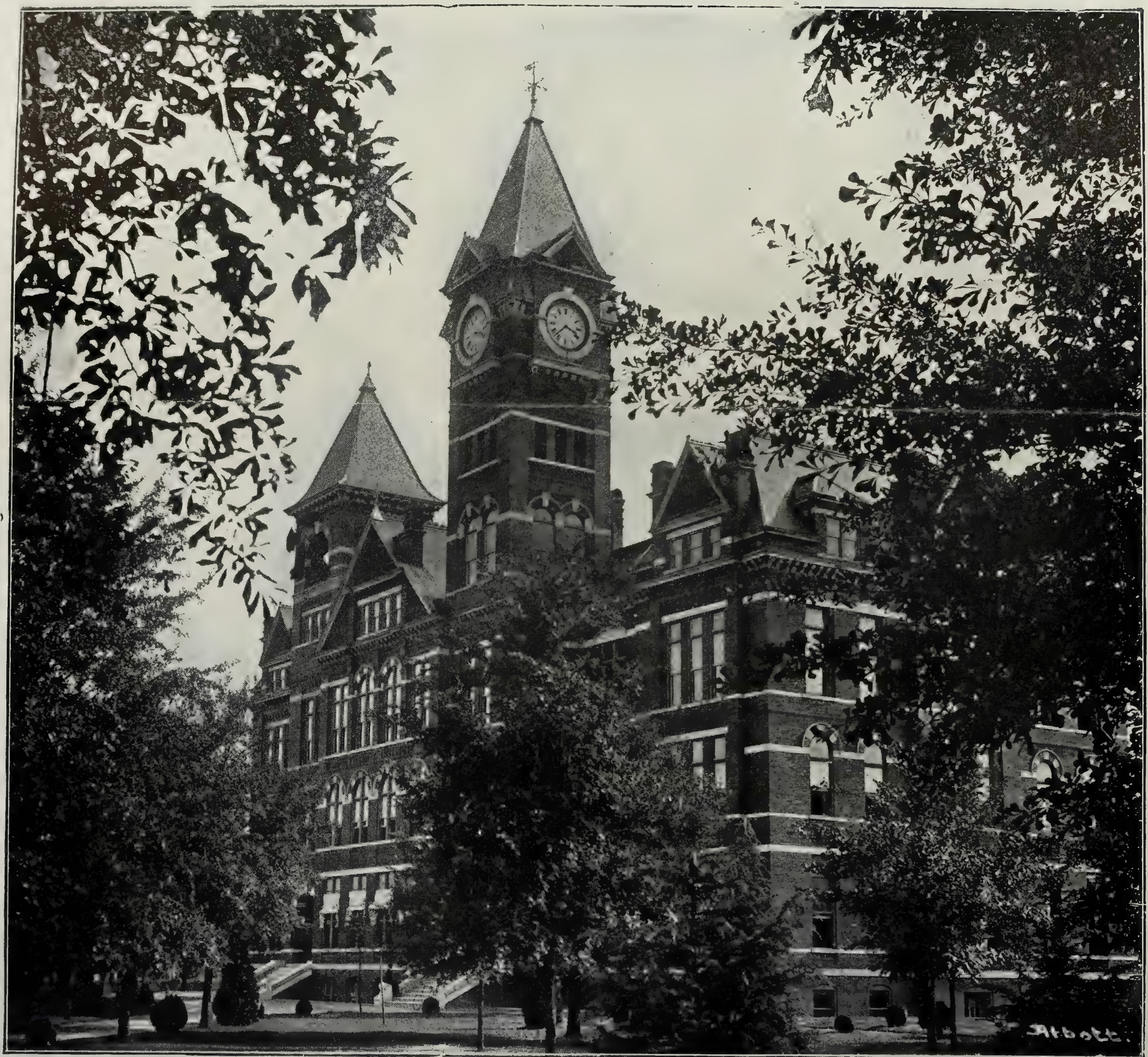

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AUBURN, ALABAMA
1911

Opelika, Ala.
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1911

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*Resigned.

The Institute is a distinctive school of science and its applications; being also the State College for the benefit of Agriculture and the Mechanic Arts, established by the State in 1872 by endowing it with the land-grant appropriation made by the United States Congress in 1862.

The leading object of the Institute, in conformity with the act of Congress and the acts of the State Legislature, is to teach the principles and applications of science.

In its courses of instruction it gives prominence to the sciences and their applications, especially to those that relate to agriculture and the mechanic arts; and at the same time the discipline and liberal education obtained by the study of language and other sciences are not neglected.

All students are required to study the English language. The Latin, French and German languages are also taught, and opportunity for their study is offered to students in any course.

The special and technical instruction given is thus based on a sound, general education.

In its different courses of education, work of great value to the youth of the State is accomplished by fitting them by a thorough science-discipline, in which manual training in the lower classes is made a prominent feature, for the successful and honorable performance of the responsible duties of life.

While every attention is given to the mental discipline of the students in endeavoring to train them to habits of accurate scientific thought, and thus to qualify them for the duties of life, their moral and Christian training will always constitute the prominent care and thought of the faculty. The Institute thus endeavors to educate as well as instruct, to form character as well as give information of value.

Library

LABORATORIES AND FACILITIES FOR INSTRUCTION

The Institute possesses facilities for giving laboratory instruction in English, history, Latin, and the departments of applied science:

COLLEGE OF ENGINEERING.

I. Civil Engineering.—A flourishing department of civil engineering has existed in the Institute since its foundation in 1872. The department occupies four rooms; office, lecture room, and spacious drawing rooms. A large amount of practical work is given the students of this department in field work.

Summer Course.—An attendance upon two sessions of the four weeks' summer course, which offers practical work in plane and higher surveying and in engineering, is required of the students taking civil engineering and mining engineering.

The department is equipped with seven transits, six wye levels, one Dumpy level, one surveyor's compass, one railroad compass, one plane table. an ample supply of tapes, chains, level and transit rods, hand instruments, and other necessary equipment. A complete camping outfit has been purchased, consisting of fourteen wall tents, each accommodating four students, forty folding camp cots, fifty camp stools, cooking utensils, dishes, etc.

II. Electrical Engineering.—In the new engineering building three rooms and an office are used by the department of electrical engineering. One of the rooms is a class room, another is used for the telephone laboratory, and the third is a laboratory for electrical measurements.

The wiring in this building is arranged so that alternating and direct currents of various voltages for power, lighting, and experimental purposes can be delivered to any room.

In connection with the laboratories there is installed a repair and construction shop furnished with a variety of hand tools and with power driven machine tools.

(*a*) The electrical measurement laboratory is furnished with a variety of resistance boxes, bridges, galvanometers, standard cells, condensers, etc., as well as two photometers. In addition to the laboratory instruments proper, just noted, the department is provided with representatives of most of the types of commercial ammeters, voltmeters, and indicating and recording wattmeters, for A. C. and D. C. work. There is also a 30,000 volt transformer for break down tests of insulating materials.

(*b*) The telephone laboratory is provided with a full line of telephonic apparatus, phones, relays, condensers, plugs, jacks, lamp and other signals, etc., representative of the Bell and a number of independent telephone companies.

Single pieces are so mounted that they can be connected up in any desired manner and thus the connections of any particular system can be made up and tested out.

(*c*) The dynamo laboratory occupies another building. Power for experimental work in the dynamo laboratory is furnished by a 60 horse power, automatic, side crank, Harrisburg engine, belted to line shaft with clutch pulleys, a 15 horse power, variable speed, Westinghouse Type F. induction motor, with controller and special resistance grids, so that the motor may be operated under full load on any controller notch, and a 25 horse power Atlas engine.

The Atlas engine is equipped with a governor which permits the speed to be varied within wide limits without stopping the engine.

This laboratory is equipped with a large number of D. C. and A. C. generators, motors, and other appliances especially adapted for experimental work. In addition, the equipment of the power plant is so arranged as to be readily available for purposes of instruction and investigation.

III. Mechanical Engineering.—A very important adjunct to the text-book work in the mechanical engineering course is the laboratory or experimental work that the students do during the senior year.

The work in heat and and steam engineering is carried on in the power house, and the following apparatus is available for instruction: A 35 horse power cross compound engine, especially arranged for experimental work; a Wheeler condenser, and a Worthington air pump and circulating pump; a 160 horse power American Ball angle compound engine; a 125 horse power tandem compound Buckeye engine; a 60 horse power Harrisburg simple engine; a 25 horse power Harris-Corliss engine; a 20 horse power Atlas engine; a 200 horse power Stirling boiler; a 100 horse power Heine boiler; a Deane duplex steam pump; a 4 1-2 horse power gasoline engine; a 2 horse power two cycle gasoline engine; a 2 1-2 horse power kerosene engine; an Ericsson hot air engine; a New York air pump; a Westinghouse air pump; an Ingersoll-Sargent air compressor; an electric headlight engine; indicators, calorimeters, thermometer, pyrometers, scales, steam gauges, and apparatus for testing steam gauges.

A room on the first floor of Broun Hall has been fitted up for a laboratory for the testing of materials. In it are installed a Riehle Brothers' testing machine arranged for making transverse, compression, and tension tests, and micrometer apparatus for measuring the deformation of the specimen under test. There is also provided a cement testing outfit consisting of a testing machine, sieves, briquette moulds. boiler and other apparatus for testing the strength, setting properties, fineness, and specific gravity of cement.

On the third floor of Broun Hall is located a laboratory for testing fuels, gases and lubricants. The present equipment consists of a fuel calorimeter to determine the heating value of fuels, complete apparatus for collecting and testing flue and furnace gases, and apparatus for determining the viscosity, the specific gravity, the flash point and other properties of lubricating oils. A small electric motor has been installed to furnish power for grinding samples, furnishing air blast, stirring, and other such work.

IV. Mechanic Arts.—The instruction in shop work is used as an auxiliary in technical education, and as a school of manual training in the arts that constitute the foundation of most industrial pursuits. The work performed by the students is instructive in character, and is intended to give the greatest amount of instruction in principle with the least repetition of operations, and the smallest consumption of time. The work is executed from drawings, and the instructor in charge of the classes makes the lessons before the class, or gives such specific directions as may be necessary to enable the student to make them. This is supplemented by individual instruction.

All students in the freshman class take this shop work, three periods a week, each period being two hours long. The sophomore class takes two periods a week. The purpose is not to teach a trade, but to train the eye, the hand, and the mind to more perfect cooperation, a training which will be of value in any pursuit in life. This training involves the principles at the foundation of all trades, of equal value to a student who wishes afterwards to learn a trade.

Three-phase electric motors are used for driving the different shops, the motors receiving current from the large alternator in the dynamo room.

(*a*) The wood department is located in a room 90x50 feet, and is provided with a surface planer, a variety saw, a swing cut-off saw, a boring machine, and a grindstone. There are, in addition, thirty benches for carpentry work, with the necessary tools.

(*b*) The wood turning and pattern shop is located in a commodious room 40x60 feet, in the second story of the new power house. It is equipped with twenty-eight wood turning lathes, a grindstone, a band saw, a buzz planer, a pattern maker's lathe, a double circular saw, and a surface planer.

In each of these departments special tools for occasional use are kept in a tool room for the purpose.

In addition to the regular carpentry tools in the benches, each student is supplied with a set of chisels, and plane irons, with a locker to keep them in, and is held responsible for their care and condition.

(*c*) The forge shop is equipped with twenty-four down draft forges, with anvils, hammers, sledges, and other tools necessary for blacksmith work, including a punch and shear for cutting and punching iron, and a blacksmith drill. The blast is supplied by a blower which is also used for supplying the foundry cupola with blast. The smoke from the forges is removed through underground passages by a 60-inch exhaust fan and discharged into the chimney.

(*d*) The foundry is equipped with a 23-inch Colliau cupola, having a melting capacity of 2,000 pounds of iron per hour, the necessary molding tools for bench and floor work, benches, a core oven, ladles, molding flasks, a foundry crane, etc. There is also a brass furnace with crucibles, crucible tongs, and the appliances necessary for making brass castings.

(*e*) The machine-shop is a room 30x100 feet, and is equipped with nine 14-inch, two 16-in, and one 18-inch engine lathes, one 10-inch speed lathe, a 20-inch drill press, a 10-inch sensitive drill, a 16-inch shaper, two iron planers, one 22-inch by 5-feet and the other 26-inch by 6-feet, a back geared universal milling machine with vertical milling attachment, a water tool grinder, a bench grinder, a universal grinding machine, a universal cutter and reamer grinder, a twist drill grinder, and a power hack saw. Three of the engine lathes have compound rests, three have taper attachments, and one is fitted with a turret and a large number of special tools and fixtures which practically convert it into a manufacturing lathe, and serve to illustrate the methods of manufacture by duplicate parts.

For chipping and filing, eighteen benches are fitted with vises and each student is supplied with hammer, chisels, files and such other tools as he may need, and a locker in which to keep them. A gasoline engine is installed in one end of the shop, and is used for driving at times when the steam plant is not running.

The tool room is supplied with general machinist tools, such as chucks, drills, reamers, taps, dies, gauges, jigs, and special tools. A convenient room is supplied with lockers for keeping clothes, and basins supplied with hot and cold water for the use of the students. The different shops are equipped with electric lamps, and current is furnished when necessary.

V. Mining Engineering, Geology, Mineralogy.—The department of mining and geology occupies the west half of the new three-story engineering building. The third floor is divided into two well lighted rooms: (1) for lectures and recitations; (2) for draughting. The lecture room is provided with seats to accommodate sixty-four students. In this room is a screen and an electric stereopticon lantern for illustrating lectures. The draughting room has a capacity for thirty. Here the student receives instruction in mechanical draughting and in the calculation and plotting of field notes.

The second story is occupied by the professor's office and the mineralogical laboratory. The latter, like each of the two rooms on the third floor, occupies a floor space of about 960 square feet. In this laboratory there are accommodations for thirty-six. Each student is supplied with a blow pipe outfit, a drawer, and a locker, and each desk is piped for gas. The laboratory is equipped with a good type collection of minerals and lithological specimens as well as working specimens. There is a collection of fossils and casts illustrating the subject of historical geology. A very useful set of about 100 wooden models of crystals has just been imported. The geological department has several specific gravity balances of various kinds, contact and reflecting goniometers, a petrographical microscope, a good collection of slides both for the petrographical microscope, and the stereopticon lantern.

VI. Ore Dressing.—The ground floor is occupied entirely by the metallurgical laboratory. This laboratory is well equipped with ore dressing plants. The concentrating plant consists of a gyratory crusher, two sets of roll crushers, two bucket elevators, four trommels or revolving screens, two classifiers, four Hartz jigs, and a seven-foot Wilfley concentrating table.

The stamp mill is of the full size Nissen type, circular discharge and interior amalgamating plate. The outside amalgamating plate is of full size, being ten feet long. The stamp mill and concentrating plant are fed from their respective bins by two different types of automatic feed. The ore before entering the bin is crushed to proper size by a Blake jaw crusher. The Model Cyanide plant illustrates the bleaching department of the cyanide process and the extractor box work. It consists of one solution tank, two sand tanks with false bottoms and filters, one gold tank, and a set of extractor box compartments of the up-flow type.

Besides the equipment already mentioned there is an automatic sampler. The cement floor in this department gives a good surface for illustrating coning and quartering in the process of hand sampling.

A twenty horse power motor is the source of power for this laboratory. Shafting, belting, and gears of various kinds transmit the power to the various machines so that a large variety of mechanism is illustrated.

VII. Architecture.—The department of architecture is located in three well lighted rooms in the Main Building. A floor space of 2,250 square feet is occupied by a lecture room, 25x30, a large draughting room, 30x35, a room for freehand drawing, 25x25, and a library, office, and special draughting room, 15x30, all connected by doors. These rooms are well furnished with large, substantial drawing tables and extra tables for freehand drawing, fixtures and additional equipment; a collection of selected plaster casts of classic sculpture and architectural details, a large number of architects' drawings and signed original plates, and several hundred examples of freehand drawings of various sorts; a library of standard works and portfolios of plates illustrating details of decoration and composition; four hundred lantern slides and many photographs of notable monuments of architecture; manufacturers' samples and catalogues; and various current journals devoted to architecture and the allied arts.

VIII. Mechanical Drawing and Machine Design.—The department of mechanical drawing and machine design is supplied with equipment for teaching mechanical drawing, descriptive geometry, kinematics, and machine design.

A convenient cabinet is supplied with a complete set of Schroeder's descriptive geometry models for demonstrating the principles of descriptive geometry and mechanical drawing. A small reference library and a library of selected catalogues of manufacturers, which is being established for the use of students in advanced machine design, occupy a suitable case. A Beck vertical wall file, 36x48 inches, for filing commerical blue-prints, is filled with selected blue-prints furnished by prominent manufacturers, and is made use of by students in machine design.

A number of kinematic models and a large collection of engineering specialties, sectioned to show interior, which were donated by the various manufacturers, occupy a sectional case, and are used in elementary work in machine design and mechanical drawing. The filing envelopes, which contain the students' drawings, are kept in alphabetical arrangement in a case of drawers.

This department is equipped with an outfit for making blueprints, consisting of two sun printing frames—18x24 inches and 30x42 inches, each mounted on a car and track, and suitable conveniences for washing and drying the prints.

All students in the lower classes are required to take drawing, a study which tends to discipline the mind, as well as to train the eye and hand to accuracy of observation and execution. Four large well-lighted drawing rooms, which will accommodate (at one period) two hundred and fifty students, are provided with tables, lock boxes, etc. The drawing rooms have been equipped with one hundred and fifty new drawing tables of the most modern pattern.

COLLEGE OF AGRICULTURAL SCIENCES.

IX. Practical Chemistry.—The chemical apparatus recently purchased for the chemical laboratory consists of a full supply of the most approved instruments for practical work and investigation. The building is supplied with water and gas and every appliance required to meet the demands of modern scientific instruction and research. In addition to the apparatus usually supplied to the first-class laboratories, there have been imported a new and improved Schmidt and Hensch's polariscope, ten short-arm balances of latest pattern, Bunsen's spectroscope, Abbe refractometer, and other instruments for delicate and accurate work.

The investigations that are undertaken in this laboratory by scientific experts, in connection with the work of the agricultural experiment station, are of special value to advanced students, and afford them unusual opportunities to learn the methods of scientific research.

The building contains a large general laboratory, that accommodates sixty students, a special laboratory for seniors that will accommodate thirty students, a lecture room with a capacity of one hundred and fifty seats, and nine other rooms, all appropriated to insstruction and research in chemistry.

The State chemical laboratory for the official analysis of fertilizers is connected with the department.

X. Agriculture.—The agricultural experiment station, established in connection with the Institute, where experiments and scientific investigations relating to agriculture are daily made, affords unusual opportunities to students to become familiar with agriculture, its defects and remedies.

The students of agriculture accompany the professors in the field, where lectures are delivered in the presence of the objects discussed, and during the year exercises in practical agriculture of an educational character are given the students who enter upon this course of study.

The farm contains 304 acres.

XI. Botany.—The laboratory for plant morphology and histology adjoins the lecture room of the professor, and is well equipped for investigation along these lines. The experimental work in plant physiology and pathology is conducted by the students in the laboratory and adjacent greenhouse, which are well equipped for this important line of work.

A botanic garden is being developed and it is the intention to add as rapidly as possible representatives of the native flora of this state, and a good collection of the native medicinal plants. In this manner it is planned to secure from the garden its maximum assistance in the work of instruction. Special work in plant breeding and biometry will also be conducted in this garden.

XII. Pharmacy.—The laboratory of this department occupies the first and second floors of the annex to the chemical laboratory, and is provided with a sufficient supply of drugs and apparatus necessary for instruction in pharmaceutical preparations. The equipment of the laboratory includes a Laurent Polariscope; a Pulfrich refractometer; a vacuum distilling and drying apparatus, consisting of 1-2 horse power air pump, vacuum chamber, condenser, and Bruhl receiver for fractional distillation under diminished pressure, a three-horse power electric motor, a complete outfit for organic combustion work, and three chemical balances.

The new pharmaceutical laboratory on the basement floor of the pharmaceutical building, is fitted with steam, and has a full equipment for research work in pharmaceutical chemistry.

The students work in the laboratory with the professor from five to eight hours, six days in the week.

The facilities are increased as means are available.

XIII. Horticulture.—A plot of twenty acres is devoted to orchards, vegetables, fruits, flowers, and grapes. There are well appointed greenhouses, fitted with modern apparatus for ventilation heat, etc. Accurate experiments are conducted in this department in fruit growing and the culture of the various vegetables adapted to this climate. Students are given in this laboratory practical instruction in grafting, budding, spraying, fertilization, gathering and marketing crops. Valuable co-operative work with the United States Agricultural Department has been undertaken in this department.

XIV. Entomology.—The completion of the new agricultural building makes excellent provision for laboratory work in this subject. The department is well equipped with apparatus for the microscopic work in entomological subjects. An excellent equipment for photographic and photomicrographic work is provided and instruction in these subjects will be given as occasion may arise. The laboratory work is closely related to the lecture work in most cases. Special attention is given to the structure and classification of insects, designed especially to familiarize the student with the principal groups into which insects are divided, and to give a basis for the selection of a proper method of treatment for their control.

The laboratory work includes also practical exercises in the preparation of the most important insecticides with proper types of construction in apparatus for applying various insecticides, and in a general way, making the student familiar with practical insecticidal work. There are also various exercises in the collection of insects and in the study of various pests which occur in the vicinity.

A reference library containing many general works upon entomology and important publications of the national bureau of entomology and of the state experiment stations is always accessible to students.

William LeRoy Broun Engineering Hall

XV. Animal Industry.—The animal industry farm contains about 260 acres; upon this farm is a dairy barn, which accommodates eighteen cows and a beef cattle shed. The students visit the barns and sheds with the instructors and are thus afforded an opportunity to study the various breeds of live stock and to do stock judging work. In addition to the pure breeds of cattle, sheep and swine upon the farm, there are always graded and scrub animals, which are used in the experimental work in feeding, breeding, etc. All of this stock is used in instructional work. The sophomore students are given daily laboratory work in which they learn the use of the Babcock tester and of various types of cream separators; they are also taught the methods of making acidity tests, the use of the lactometer, how to make and judge butter, etc. During the second term of the sophomore year the students are given practice in scoring and judging dairy and beef cattle, sheep, and swine. During the junior year instruction in judging horses and mules is given.

ACADEMIC COLLEGE.

XVI. History and English.—All advanced work in history is conducted by the laboratory method. This plan has been successfully employed in the junior, the senior, and the graduate classes. A large and well lighted room has been set apart for this work in the new library building, where all the resources of the rapidly growing library are easily accessible. This room is equipped with maps, diagrams, charts and suitable tables and chairs. The library is a depository for all government publications. These and other books on American history, with which it is well supplied, offer abundant material for research work in the history of our country. The publications collected by the experiment Station constitutes valuable material for study in industrial history.

Opportunity is also offered for laboratory work in English in the sophomore class. This work includes constant practice in writing and an independent study of the various forms of discourse, narrative, descriptive, expository, and argumentative.

XVII. Physics.—The physical laboratory occupies two rooms, one of these being permanently darkened for experimental work in light. It is equipped with numerous standard instruments of precision, such as verniers, micrometers, cathetometers, a horizontal comparator, a Kater's revision pendulum, balances, etc., and a quantity of minor apparatus. Recently there have been added a concave grating spectograph, a large induction coil of 12-inch spark, and other apparatus of value.

XVIII. Military Tactics.—Instruction in this department is given in conformity with the act of Congress. Students receive the benefit of regular military drill, and in addition, the military system is used as a means of enforcing discipline and securing good order, promptness, and regularity in the performance of academic duties. The department is supplied with cadet rifles and accoutrements for the corps.

COLLEGE OF VETERINARY MEDICINE AND SURGERY.

XIX. Physiology and Veterinary Science.—The veterinary department occupies a separate two-story building with nine rooms. It is provided with lecture room, office, working and operating rooms for clinical practice, thoroughly equipped laboratories for work in bacteriology, milk and meat inspection, and with museum containing skeletons of the domestic animals for instruction. Free clinics are given every Saturday for the benefit of the students in veterinary science.

There is a separate dissecting room with cement floor and north roof light, constructed especially for this department. This laboratory is used by the professor and students each afternoon for three months.

BUILDINGS.

The frontispiece is a representation of the Main Building. This building is 160x71 feet, and contains forty-five rooms. It contains lecture rooms, administration offices, physical laboratory, museum, armory, etc.

LANGDON HALL.

This is a two-story building, 90x50 feet. The second story is the audience hall, used for commencement and other public occasions.

ELECTRICAL AND MECHANICAL LABORATORIES.

The first story of Langdon Hall is appropriated to the laboratory of first year wood work in mechanic arts.

The machine shop, forge shop, foundry, and boilers are installed each in separate buildings. A handsome building, two stories in height, pressed brick and stone trimmings, has been recently constructed for occupation by the power plant on the first floor and by the pattern making department on the second floor. The dynamo laboratory occupies a separate building.

BROUN ENGINEERING HALL.

The alterations and additions to the William LeRoy Broun Engineering Hall were completed and the building occupied in September, 1910. The finished structure is 250 feet long, 50 to 90 feet deep,

and three and four stories in height, enclosing a floor area of 43,500 square feet. In construction this building is practically fire proof, and in exterior design conforms in general to the other buildings on the campus. The walls are laid up in selected red brick, with limestone and terra cotta trimmings.

Offices, lecture rooms, and laboratories for the departments of mechanical, electrical, mining, and civil engineering, machine design, and drawing are located within this building, and all the interior accommodations are especially arranged to facilitate the special work of each department.

Expansion into fully equipped and commodious laboratories will very naturally increase the efficiency of the College of Engineering and Mines. This building, an illustration of which appears on a preceding page, was designed and superintended by the department of architecture.

CHEMICAL LABORATORY.

As shown on the opposite page, this is a two-story structure, 40x60 feet, with a rear projection, 35x60 feet, of one story and basement, and contains eight rooms. The exterior is of pressed brick, with cut stone trimmings, and terra cotta ornamentation.

The main laboratory will accommodate sixty students and contains improved working tables, with water, gas, and every necessary appliance for chemical work. The laboratory for advanced work in chemistry will accommodate thirty students, and is equipped in the same manner. Adjoining this are two rooms which are used respectively as a balance room, and a room for work with spectroscope, polariscope, etc. The second story contains a lecture room with seats and tables for one hundred and twenty students. Around the lecture room are cases containing crude and manufactured products, illustrating agricultural and mechanical chemistry, prominent subjects taught in the institution.

In the basement are ample accommodations for assaying and storage.

ANNEX TO CHEMICAL LABORATORY.

This is a three-story brick building, containing rooms for pharmacy and drawing.

The chemical laboratory for the agricultural experiment station occupies a building 60x26 feet, and is appropriated exclusively for chemical investigation and research.

SMITH HALL.

The Otis D. Smith Dining Hall, constructed of stone and pressed brick, is two stories in height, and one hundred and forty feet in length. It will accommodate three hundred in the dining hall, and forty in the dormitories above. The style is semi-colonial, and is quite attractive.

CARNEGIE LIBRARY.

The library building is a handsome structure of classical outline monumental in its general effect. It is presented in an accompanying cut.

AGRICULTURAL BUILDING.

A handsome and commodious building has been erected for the departments of (1) agriculture, (2) horticulture, (3) botany, (4) entomology, and (5) animal industry, together with a separate set of buildings for practical work in each of these departments. It is the general opinion that there is no superior, if equal, group of buildings for agricultural purposes in the South. The building is three stories in height and is constructed of pressed brick with stone trimmings.

GRADUATES

CLASS OF 1910

HONORS.

Members of the Senior Class who attain distinction with a grade of 95 per cent. are Graduates with Highest Honor. Those who attain a distinction with a grade of 90 per cent. and less than 95, are Graduates with Honor. Those who attain less than 90 per cent. and more than 60 per cent. are Graduates.

DEGREES.

BACHELOR OF SCIENCE.

GRADUATES.

Charles Robertson Allen	Georgia
James Jefferson Beaver	Walker
Ralph Upshaw Blasingame	Lee
George Eason Blue	Montgomery
Douglas Gerald Boozer	Georgia
Ridgeway Smith Boyd	Coffee
Albert Cook Bryant	Wilcox
Sidney Marsh Bryant	Wilcox
Hugh Buchanan	Georgia
Ralph Carlisle	Lee
Nash Sentell Carr	Tallapoosa
Charles Freeman Carter	Georgia
Eugene LaFayette Cathcart	Wilcox
Benjamin Taylor Collier	Morgan
George Benjamin Collier	Pike
George Seymour Cooper	Calhoun
Edward Lane Davis	Mobile
Henry Howard Davis	Geneva
Lewis Manning Dinsmore	Morgan
Thomas Henry Edwards	Lee
William Thomas Ewing	Covington
Jefferson Cameron Falkner	Montgomery
Homer Quitman Gantt	Covington
William Walton Garrett, Jr.	Jefferson
James McAdory Gillespie, Jr.	Jefferson
Schley Gordy	Georgia
Ernest Starr Hansberger	Jefferson
William Augustus Harman	Georgia
Loyd Jerome Hawley	Henry

Elmer Arthur Haynie	Lee
Asa G. Hubbard	Marshall
Talmage Coates Hughes	Etowah
James Parks Hutcheson	Tallapoosa
Charles Paul Illges	Russell
Robert Bellinger Janney	Walker
Franklin Pollard Jones	Jefferson
Bertram Kaufman	Georgia
John Judson Keyes	Limestone
Leo Kling	Mobile
Richard Isaac Lanier	Jefferson
Michael Jones Lingo	Henry
William Lee Lloyd	Macon
Milton Lothrop, Jr.	Texas
Joel Thaddeus McLemore, Jr.	Greene
George Tilghman McWhorter, Jr.	Colbert
William Roberts Martin	Dale
Clarence Edward Mohns	Jefferson
Dennis Markette Moore	Georgia
Roy Worsham Moore	Georgia
Arthur Sanford Noble, Jr.	Elmore
William Carter Oliver	Texas
George Horatio Packwood	Florida
Wales McIntosh Perdue	Jefferson
Howard Kennedy Porter	Georgia
Ormon Nimmons Powell	Georgia
James Freeland Reeves	Barbour
Bryant Richardson	Sumter
Jesse Blake Rutland	Chambers
McKee Brooks Scott	Tuscaloosa
George Frank Slaughter	Tallapoosa
Malcolm Alexander Smith	Autauga
Charles Lewis Speake	Morgan
John Morris Spearman	Walker
Edwin Ray Stauffacher	Georgia
Thomas Neil Steagall	Henry
William Swart	Louisiana
Albert Hodges VanDuzer	Georgia
Willis Venable	Jefferson
John Edward Walker	Tallapoosa
Lindsey Irwin Wallin	Georgia
Richard Christopher Ward	Henry
William Riddle Ward, Jr.	Greene
Benjamin Weil	Jefferson
Austin Walker West	Georgia

Charles Bowden Wilhoite	Tennessee
John Price Williams	Marion
Joseph Kyle Woolfolk	Georgia
Chandler Cox Yonge	Florida
Albert Leon Young	Lamar

GRADUATES WITH HONOR.

Samuel Adler	Calhoun
David Jasper Burleson	Marion
Alto Lee Byrd	Lee
Dudley Murfee Clements	Lee
Joseph Cohen	Tallapoosa
Louis Breitenbach Ehrlich	Georgia
Covington Drane Jenkins	Georgia
James Arthur Parrish	Randolph
Parker Preston Powell	Choctaw
John Thomas Williamson	Cherokee
Isadore Zadek	Montgomery

GRADUATES IN PHARMACY (PH. G.)

Grover Cleveland Kirkland	Escambia
Joseph Wilkinson McNeel	Tuscaloosa
Edward Fleming Smith	Covington
Joseph Jenkins Taylor	Washington

GRADUATES IN VETERINARY MEDICINE (D. V. M.)

Elam Tandy Hallman	Talladega
Forrest Revell Harsh	Lee
Armstrong Hill	Talladega
William Lemuel Ingram	Lee
Walter Herbert Lee	Pike
Calloway Charles Middleton	Lowndes
Robert James Strickland	Lowndes
Frank Perry Woolf	Baldwin

POST-GRADUATE DEGREES.

MASTER OF SCIENCE.

Walter Stanley Childs	Georgia
Gilbert Graffenreid Glover	Jefferson
Mary Katherine Hollifield	Lee
Herman Clarence Nixon	Calhoun
George Washington Taylor	Choctaw
Ernest Wood Thornton	Talladega
Alma Cole Tompkins	Arkansas

MECHANICAL ENGINEER.

Benjamin Edward Harris	Lee
Edward William Lind	Jefferson
Josiah Whittaker Powell	Lowndes

CIVIL ENGINEER.

Andrew Duke Cameron	Montgomery
Louis Warren Duffee	Mississippi
Daniel Herren	Elmore
Dorsey Julian Parker	Walker
James Grey Stelzenmuller	Baldwin

DISTINGUISHED STUDENTS

Students who receive a grade of above 90 per cent. and less than 95 in three studies in the Freshman Class, in four in the Sophomore Class, in five in the Junior, and in six in the Senior, are distinguished for excellence in scholarship, and are awarded Certificates of Distinction. Those who receive a grade above 95 per cent. are awarded Certificates of Highest Distinction.

FRESHMAN CLASS.

DISTINCTION.

Thomas Guerdan Hearn	Macon
Arlandus Leon Jerdan	Franklin
Frampton King	Florida
William Harmong Lamar	Walker
Henry Augustus Lee	Georgia
Harry Crispe Sessions	Wilcox
Boyd Shaver	Montgomery
Derwood Lee Taylor	Lee
James Herbert White	Tallapoosa
John Howard Wills	Lee

HIGHEST DISTINCTION.

Claude Everett Edmiston	Florida
Henry Grady Floyd	Lee
Hugh Carey Hanlin	Colbert
Joseph Edwin Lacey	Jefferson
Rupert Alonzo McGinty	Jefferson
Charles Benton Moore	Perry

SOPHOMORE CLASS.

DISTINCTION.

Clarence Pax Andrew	Georgia
Douglas Thomas Beatty	Jefferson
Henry Irwin Brengle	Florida
Fleming Cayce Burns	Lauderdale
Charles Dean Chitty	Georgia
Frank Richard Curtis	Lee

Nolan Lewis Dudley, Jr.	Georgia
John Frederick Duggar, Jr.	Lee
Henry Wiley Grady	Chambers
Samuel Cheatham Harrell	Lee
Robert Austin Jones	Montgomery
William Harold Joyner	Russell
Roy Miller Lilly	Georgia
Arthur Bernhardt Newman	Madison
Charles Edward Sauls	Georgia
Thomas Holmes Whitfield	Marengo

HIGHEST DISTINCTION.

Walker Anderson, Jr.	Florida
Charles William Crumly	Jefferson
Samuel Ridgely Cruse	Madison
Frances Camp Duggar	Lee
Willis Belmont Nickerson	Tallapoosa
John Emmett Pitts	Russell
Charles Coleman Thach, Jr.	Lee

JUNIOR CLASS.

DISTINCTION.

Robert Waddell Chapman	Montgomery
John Eayres Davis	Mobile
Lewis Pritchett Fort	Dallas
Thomas Morris Francis	Calhoun
Thurston DuPuis Futch	Florida
L. Llewellyn Glover	Jefferson
William Davis Hall	Georgia
Walter Alexander Hicks	Tallapoosa
Edgar Allen Hodson	Limestone
Grafton Lothrop	Texas
Thomas Jasper Miles	Montgomery
Albert Burton Moore	Fayette
Edmund Fay Pearce	Autauga
Richard Anderson Stratford	Russell

HIGHEST DISTINCTION.

Joel Clarence Ford	Marion

SPECIAL STUDENT.

DISTINCTION.

Homer Walter Jones	Jefferson

VETERINARY STUDENTS.

DISTINCTION.

Dillard Oreen Browning	Montgomery
Elam Tandy Hallman	Talladega
George Washington Lewallen	Jackson
Bennett Thomas Simms	Sumter

CATALOGUE OF STUDENTS

SESSION 1910-11

GRADUATE STUDENTS.

Samuel Adler	Calhoun
Alto Lee Byrd	Lee
Edward Tarleton Collier	Montgomery
George Benjamin Collier	Pike
Lewis Manning Dinsmore	Morgan
Ernest Rogers Eudaly	Lee
Gilbert Graffenreid Glover	Jefferson
William Augustus Harman	Georgia
Mollie Hal Hollifield	Lee
Mary Katherine Hollifield	Lee
Talmage Coates Hughes	Etowah
John Judson Keyes	Limestone
Dennis Markette Moore	Georgia
Arthur Sanford Noble	Elmore
Parker Preston Powell	Choctaw
McKee Brooks Scott, Jr.	Tuscaloosa
Leslie Warren Shook	Jackson
John Edward Walker	Tallapoosa
William Riddle Ward, Jr.	Greene
John Thomas Williamson	Cherokee

SENIOR CLASS.

William Wrenshall Alexander	Missouri
Burton Gray Allen	Marengo
Joseph Young Andrews	Lee
Riley Gilbert Arnold	Marion
Miles Augustus Askew	Marengo
Harvey Chester Bates	Bullock
William Corrie Bibb	Dallas
William Tuenly Bates	Jefferson
James Thornton Bidgood	Mobile
James Williams Bivins, Jr.	Georgia
Leonard Maurice Blumenfeld	Lee
William Smith Bonner	Clay
William Wray Boyd	Lee

Cyril Macaulay Brennan	Georgia
James Ray Brooks	Montgomery
Walker Edward Bryan	Marshall
Henry Carl Buchan	North Carolina
Hancel William Caldwell	Lee
Milton Marion Cardwell	Marshall
John James Cater, Jr.	Georgia
Eugene Leon Caton	Covington
Robert Waddell Chapman	Montgomery
Otis Gilmer Clements	Lee
Dabney Otis Collins	Hale
John Willoughby Crane	Jefferson
John Eayres Davis	Mobile
Hal Stephens Dumas	Georgia
Samuel Worth DuPuy	Jefferson
Milner Hubbard Eskew	Dallas
Cedric Errol Faber	Georgia
John Poston Figh	Montgomery
Benjamin Beall Fontaine	Marshall
Joel Clarence Ford	Lee
Lewis Pritchett Fort	Dallas
Thomas Morris Francis	Calhoun
Luther Dillard Fuller	Montgomery
Thurston Dupuis Futch	Florida
Alton Gissendanner	Dale
L. Llewellyn Glover	Jefferson
Jesse Cleveland Good	Blount
Robert Knox Greene	Jefferson
William Berry Griffin	Clay
William Davis Hall	Georgia
Arthur Finley Harper	Jefferson
Evans Harrell	Lee
Forrest Revell Harsh	Jefferson
William Reese Harvey	Bibb
Albert Adkins Hedge	Mobile
James Lane Henderson	Jefferson
Staton Silvian Hertz	Montgomery
Gordon Hicks	Tallapoosa
William Felix Hodges	Marion
Edgar Allen Hodson	Limestone
Alonzo Barber Hooper	Marshall
Waldo Brashear Hooper	Marshall
Sidney Sibley Jerdan	Franklin
John Stanley Jervis	Morgan
Harry McCrorie Johnstone	Jefferson

Max Kessler	Georgia
Christian Brower Ketcham	Texas
John Russell Liddell, Jr.	Wilcox
Grafton Lothrop	Texas
Edgar Wood Lumpkin	Marshall
Alexander Aubrey Lyons	Montgomery
Robert James Malone	Jefferson
Haskell Hair Martin	South Carolina
Thomas Burton Meadows	Cullman
Thomas Jasper Miles	Montgomery
Albert Burton Moore	Fayette
Charles Moore	Bibb
Laurence Stern Morgan	Jefferson
Jemison Mims Moseley, Jr.	Dallas
John Robert McCaghren	Jefferson
Earl Hill McCowen	Georgia
Howard Clifford McGregor	Jefferson
John Autry McGuirk, Jr.	Calhoun
William Alonzo McIntosh	Tallapoosa
Clarence Thomas Nichols	Madison
Hugh O'Brien	Montgomery
Frank Ordway	Tennessee
Jack Lawrence Orr	Jefferson
William Malcolm Orum	Montgomery
Frank Lawrence Owsley	Elmore
Edmund Fay Pearce	Autauga
John Haigler Phillips	Elmore
Saxon Pace Poyner	Dale
Van F. Pruitt	South Carolina
Edmund Urquhart Ragland	Montgomery
Alfred Paul Ransom	South Carolina
Chauncey Lewis Rhodes	Marengo
Mac Trotter Robertson	Georgia
Robert Burch Robinson	Georgia
Frank Ross	Lee
Mary Jane Ross	Lee
Lewis Arthur Scarbrough, Jr.	Georgia
Olin Herbert Sellers	Lee
Asa Herman Skinner	Marengo
Percy McCall Smith	Jefferson
Orion Patrick South	Blount
Frederick Stewart	Bibb
Richard Anderson Stratford	Russell
Thomas Willburn Taunton	Chambers
Homer Bernard Tisdale	Conecuh

Benjamin Mills Washburn	Montgomery
William Overton Winston	Sumter
Benjamin Allen Wooten	Marengo
Robert Byrd Wright	Georgia
Thomas Parks Wright	Jefferson

JUNIOR CLASS.

Alfred Proctor Aldrich, Jr.	South Carolina
Edward Shall Allen	Jefferson
Walker Anderson	Florida
Clarence Pax Andrew	Georgia
Malcolm Marion Argo	Macon
Preston Stodard Avery	Florida
Douglass Thomas Beatty	Jefferson
James Walter Lee Benson	Mobile
William Curtis Bethea	Lee
*Arthur Washington Billingsley	Clay
Bernard Bartley Blanton	Florida
Bernard Decker Boatright	Georgia
Dallas Sidney Boyd, Jr.	Lee
Arthur Dortch Bradfield	Georgia
Clarence J. Brassell	Florida
Henry Irwin Brengle	Florida
George Allen Brewer	Tallapoosa
Henry Wells Brooks	Georgia
Roland Lee Brooks	Georgia
George Patrick Brown	Jefferson
Taylor George Burke	Montgomery
Fleming Cayce Burns	Lauderdale
William Wallace Caldwell	Lee
Joseph Callaway, Jr.	Montgomery
*Winton Brasher Carlton	Washington
Frank Gamble Carrington	Calhoun
Joseph Emerson Carter	Georgia
Stuart Alexander Chamblin	Mobile
Charles Dean Chitty	Georgia
William Frederick Cobb	St. Clair
William Harvey Cogswell	South Carolina
Charles William Crumly	Jefferson
Samuel Ridgeley Cruse	Madison
Frank Richard Curtis	Lee
Sidney Shaler Daniell	Georgia
Othmar Kendrick David	Georgia
*Bunyan Davie, Jr.	Barbour
William Wilfred Davies	Jefferson

*Not in full standing.

Clarence Bradford Dawson	Elmore
Edward Alonzo Dillard	Lee
Thomas Floyd Drew	Georgia
Hugh Joseph Dudley	Russell
Nolan Lewis Dudley, Jr.	Georgia
Frances Camp Duggar	Lee
John Frederick Duggar, Jr.	Lee
Jessie Floyd	Lee
John Penick Fontaine	Lee
Henry Wiley Grady	Chambers
John Isaac Handley	Clay
Samuel Cheatham Harrell	Lee
John Emmette Harris	Wilcox
Velma DeForest Hartley	Blount
Arthur Zellars Heard	Lee
Felix Lloyd Jenkins	Georgia
Judson Brewer Johnson	Tallapoosa
John Michael Johnson	Elmore
Robert Austin Jones	Montgomery
George Alston Kellum	Shelby
Joseph Ketzky	Montgomery
Roy Miller Lilly	Georgia
John Lemley Liles	Marshall
Ernesto Felix Lopez	Mexico
Earle Alexander Major	Jefferson
Ernest Devon Manning	Covington
Cleon Albert Miller	Jefferson
Glenn Loveless Moore	Montgomery
James Monroe Moore	Fayette
Malcolm Eugene Morgan	Jefferson
Frank George Mullen	Talladega
Thomas Bragg Myers	Texas
Julius Watkins McCall	Montgomery
James Kirk Newell	Tallapoosa
Arthur Bernhardt Newman	Madison
Willis Belmont Nickerson	Tallapoosa
Millard Filmore Nixon	Marshall
*James Frank Orr	Dallas
Woodfin Grady Page	Geneva
*William Ware Palmer	Lee
*Hugh Pitard	Mobile
John Emmett Pitts	Russell
Samuel Rutherford Pitts, Jr.	Russell
Oscar Richardson Porter, Jr.	Butler
John Cummings Postell, Jr.	Georgia
Alfred Wade Reynolds	Barbour

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*Not in full standing.

James Benagh Richardson	Limestone
Raymond Grover Ridgely	Florida
Archibald Bradshaw Roberts	Barbour
David Clare Rumph	Georgia
Wiley Scott Russell	Jefferson
Charles Edward Sauls	Georgia
Frank Paul Schone	Germany
Claude Winchester Shelverton	Georgia
Willie Lee Sims	Marshall
Chester A. Smith	Michigan
Hazen Eager Smith	Autauga
Harry Lester Smith	Mobile
Harrell Warlton Smith	Jefferson
Mayhall Charles Smith	Wilcox
Roger Downs Smith	Jefferson
Ralph Hughes Spencer	Texas
Gordon Hall Steele	Lee
Cecil Baron Strobhar	Georgia
*Havilen Torry Strout, Jr.	Lee
Charles Coleman Thach, Jr.	Lee
William Heber Thames	Mississippi
Charles Numa Thibaut	Louisiana
Otto Tidwell	Lee
George Reeves Vaughan, Jr.	Mobile
John Walden	Georgia
John Caffey Watson	Morgan
William Collins White	DeKalb
Thomas Holmes Whitfield	Marengo
Hugh Hardy Williamson	Lowndes
John Williamson	Jefferson
Paul Bernard Williamson	Montgomery
Edwin Percy Winters	Jefferson
Claude Rodolphus Wood	Marion
Charles Porter Wright	Lee
George Taylor Wyche	Montgomery

SOPHOMORE CLASS.

*Otto Hamlin Agricola	Etowah
Cecil Elmo Alexander	Autauga
John Wood Alexander	Louisiana
Charles Jefferson Allen	Lee
Thomas Clifton Almon	Morgan
Fritz Thompson Ambrose	Bibb
Lawrence Cary Amos	Conecuh
Sidney Russell Amos	Conecuh
Winston Paine Anderson	Jefferson

*Not in full standing.

William Webster Bagley	Georgia
Harris Mitchell Baker	Georgia
Ernest Rowland Baldwin	Texas
Andrew Jackson Bethea	Marengo
Joseph Robbins Bibb	Dallas
Julius Sylvester Blackburn	Lee
*Leon Augustus Boyd, Jr.	Coffee
Henry Maddox Brittain	Randolph
Lewis Lofton Brock	Sumter
Harvey Abner Brown	Montgomery
Otto Brown	Choctaw
Beechman Burdeshaw	Houston
Thomas William Bush	Georgia
George Lee Campbell, Jr.	Houston
Royden Wendel Carter	Limestone
Aldo Francisco Castagnoli	Bibb
Walter Payne Christian	Shelby
Frederick Emmett Cooper	Calhoun
Alexander Stephens Corgill	Marengo
Eugene Cowart	Escambia
Olin Hendrix Cowden	Blount
*David Frank Crawford, Jr.	Jefferson
Rufus Franklin Dail	Mississippi
Paul Mitchell Davenport	Georgia
George Lawrence David	Sumter
Samuel Moore Dillard	Madison
Ernest Archibald Dixon	Mississippi
Robert Emmett Dixon	Sumter
Francis Earl Dunlap	Shelby
Claude Everett Edmiston	Florida
Wendell Holmes Ellenburg	Shelby
Thomas Melville Erickson	Mobile
Benjamin Ellsworth Evans	Lee
Lester Erastus Evans	Georgia
Eugene Cummins Ewing	Etowah
*Charles A. Faulk	Barbour
Calder Willingham Finney	Georgia
Henry Grady Floyd	Lee
Robert Raymond Folmar	Crenshaw
Thomas Hagan Frost	Limestone
Emery Elgin Fry	Texas
Homer Glenn Fuller	Washington
Oliver Ira Gaines	Jackson
John Marion Gast, Jr.	Madison
*Arnall Glover	Jefferson

*Not in full standing.

Henry Homer Gossett	Georgia
Arthur Emery Gregory	Georgia
Young Charles Hall	Baldwin
Hugh Carey Hanlin	Colbert
Herbert Giles Hard	Jefferson
Robert Franklin Harrison	Madison
Franklin August Hart	Montgomery
*Amos Jackson Hatton	Houston
Thomas Guerdon Hearn	Macon
Harvey Curtis Heath	Coffee
Henry Harmon Heine	Talladega
Daniel Frank Hixon	Bullock
*Walter Roy Hoffman	Lee
Chalmers Duke Horne	Florida
*Thaddeus Edgar Horton	South Carolina
Joel Hurt, Jr.	Georgia
*Allen Patrick Jemison	Jefferson
Arlandus Leon Jerdan	Franklin
*Jerome Keeling	Etowah
*Richard Griffin Key	Florida
James Frampton King	Florida
Joseph Edwin Lacey	Jefferson
Mitchell Porter Ledbetter	Jefferson
Henry Augustus Lee	Georgia
Robert Curry Lett	Lee
Alvin Leo Lewis	Jefferson
*Frank Cary Lipscomb	Lee
James Edwin Livingston	Macon
William David Lockhart	Dallas
Clyde Augustus Lowry	Dallas
*Griffin Deaderick Martin	Walker
William Broadus Massey	Jefferson
John Ephraim Mathews	Georgia
Thomas Rex Mathews	Talladega
Jeffrey Emanuel Meyer	Dallas
Frank Lamar Micou	Chambers
Albert Carter Miller	Georgia
Charles Benton Moore	Perry
Harry Lee Moore	Georgia
James Dolphin Moore, Jr.	Jefferson
Alexander Edwin Morrow	Tuscaloosa
Emery Tyler Motley	Randolph
J. C. Moxley	Crenshaw
Donald Nelson Murdoch	Jefferson

*Not in full standing.

Jefferson McCord	Coosa
*William Frank McDaniel	Houston
Samuel Lucas McDowell	Wilcox
Robert Peyton McEniry	Jefferson
Rupert Alonzo McGinty	Jefferson
John Hearn McKnight	Jefferson
Terry McCall McPherson	Lee
Andrew Jackson Noble	Elmore
Duncan Nolan	Jefferson
Rex Phillipps Oliveros	Georgia
Constantine Brause Palmer	Tennessee
Dabney Palmer	Washington
*Lucius Key Palmer	Jefferson
John Bellinger Patrick	Perry
Morgan Milton Pearson	Randolph
Lawrence Lee Perrin	Dallas
E. R. Phillips, Jr.	Dale
Frederick Eugene Pickett	Bullock
Marvin Pipkin	Florida
Jesse Graves Pittman	Houston
Emmett Eugene Pollard	Crenshaw
Joseph Neil Poole	Butler
Leon Louis Powell	Choctaw
Carl E. Pritchett	Clarke
*J. Gano Winter Robertson	Louisiana
Ransom Eugene Rutland	Chambers
William Connor Samford	Montgomery
Harold Schmidt	Louisiana
Harry Crispe Sessions	Wilcox
Thomas Ledyard Sharpe, Jr.	Walker
Boyd Shaver	Montgomery
William Edward Shivers	Shelby
Allen Percy Smith	Walker
*Charles McLemore Smith	Lowndes
Henry Grady Smith	Perry
Guy Spearman	Walker
Henry Turner Spence	Georgia
Solomon Stein	Limestone
George Vaughn Stelzenmuller	Baldwin
Peter Melville Stewart	Jefferson
Robert Hardaway Strickland	Georgia
William Thomas Summers	Georgia
Derwood Lee Taylor	Lee
Bennett Ross Taylor	Illinois

*Not in full standing.

Bronier Lastrappe Thibaut	Louisiana
John Edward Thomas	Marion
Peyton Wade Thompson	Georgia
John Penn Tomberlin	Florida
Charles Lleuyellen Torbert	Chambers
Clyde Germany Trammell	Florida
Ralph Tribble	Jefferson
Homer Johnson Urquhart	Jefferson
Glen Connor Walker	Coosa
Matthew Reid Wallis	Chambers
William Rush Walton	Louisiana
Adiel Ernest Ware	Georgia
Claud Wright Watson	Wilcox
William Eugene Watson	South Carolina
James Sebastian Watts	Jefferson
Augustus Foscue Whitfield, Jr.	Marengo
Bryan Watkins Whitfield	Marengo
Earl Judson Williams	Butler
John Howard Wills	Lee
Wyatt Blake Wood	Randolph
John Benton Woodburn	Georgia
Charles Hereford Yeatman	Madison
Hugh Gardner Zeigler	Butler

FRESHMAN CLASS.

Ernest Clifton Adkins	Jefferson
James Walter Anderson	Hale
*Benjamin Hill Andrews	Chambers
William Edward Arnold	Florida
Cullen Baker	Georgia
*Peyton Powell Baker	Jefferson
Marion Augustus Baldwin	Bullock
Augustus Barnes	Lee
*Geoffrey Alan Barton	Louisiana
William Muller Bayne	Louisiana
George Beggs	Etowah
Robert Ferdnand Angelo Benson	Mobile
John Goodman Bethea	Conecuh
Benjamin Paul Blasingame	Lee
Rives Hood Boykin	Mobile
Thomas Cochran Bragg	Camden
Hugh Marks Bray	Barbour
*Mohler Gibson Breckenridge	Marengo
Carl Brindley	DeKalb
Abbie William Brooks	Lee

*Not in full standing.

Edward Brown	Washington
*William Almon Bullock	Franklin
Walter Moore Bullock	Franklin
*John Cantley	Jefferson
Fletcher Franklin Carter	Shelby
Frank Gregory Charlton	St. Clair
William Taylor Cheney	Marengo
Clarence Earl Chestnut	Cherokee
Erskine Cunningham Cleere	Jefferson
*Edwin Early Clements	Lee
Frank Hartman Clements	Limestone
George William Clover	Jefferson
Charles Hadley Cooper	Georgia
James Paul Corgill	Marengo
Maurice Henry Crane	Jefferson
*Edward Luckie Cummings	Hale
Grady Lee Dabbs	Jefferson
Robert Dearing	Franklin
Robert Dennis	Pike
Harry Price Dixey	Louisiana
Harry Marshall Dixon	Georgia
John Clinton Donehoo	Blount
Render Ware Dowdell	Chambers
*Daniel Washington Duncan	Franklin
Monroe Sublett Esslinger	Madison
Herbert Houston Farr	Jefferson
Harry Roy Faucett	Bibb
Enoch Dortch Fly	Jefferson
*Max Folmar	Pike
*Arthur Foster	Cleburne
John Wilbur Freeman	Chambers
William Aaron Garner	Cherokee
Edward Lawrence Gilder	Montgomery
John Sharp Gillespy, Jr.	Jefferson
Hugh Campbell Going	Jefferson
*William Bowen Gonzalez	Florida
Cecil Stewart Grimes	Georgia
*Hugh Groover	Georgia
Robert Lawrence Groover	Georgia
Frederick Cecil Hallmark	Jefferson
John Henry Hanson	Tallapoosa
Joseph John Haralson	Lee
Charles Andrew Harris	Montgomery
*Carl Hixon	Monroe
Charles Levi Hollingsworth	Talladega

*Not in full standing.

John Lomas Hope	Georgia
David Stuart Hotchkiss	Lawrence
Blanchard Byrd Jordan, Jr.	Georgia
Edward Blake Jordan	Georgia
Robert Love Kenan	Dallas
Charles Landman	Madison
John Wesley Lawler	Lee
John Lewis Leslie	Houston
Jeffrey Levy	Jefferson
Lester Lewis	Bibb
Eugene Mason Lindsey	Georgia
*John Bruce Long	Butler
*Arthur Story Makin	Jefferson
Charles Bartley Martin	Walker
Robert Holloway Martin	Conecuh
*John Thomas Martin	Calhoun
Manly Foster Meador	Marengo
Melvin Hammond Means	South Carolina
John Pace Melton	Georgia
Paul Minnis	Talladega
Porter Mixon	Houston
Charles David Moon	Coosa
Lorenzo Daniel Morgan	Dallas
George Lewis Moulton	Mobile
Robert Walker Murray	Georgia
Samuel Strudwick McCants	Marengo
*James Henry McCary, Jr.	Jefferson
Joseph Herkimer McCombs	Montgomery
Walter Douglass McCormack	Jefferson
*Joseph Thomas MacLean	Florida
*Robert Gibson McLester	Jefferson
Wayne Brasher Nelson	Jefferson
Charles Stay Noble	Calhoun
*Peyton Norvell, Jr.	Jefferson
John William Pace	Lee
*James Hubert Page	Geneva
Milton Sanders Park	Pike
John Heard Patterson	Elmore
Loomis Gay Pearson	Randolph
Millard Hosmer Pearson	Randolph
Thomas Candler Perry	Russell
DeKalb Pierce	Barbour
Francis Carter Plaster	Montgomery
Orville Pope	Marion
Albert Prim, Jr.	Clarke

*Not in full standing.

*Wilmer Williamson Ramsey	Franklin
Insco Remington	Washington
*Edward Howard Reynolds	Dallas
Thomas Orlando Robertson	Georgia
*Henry William Robinson	Covington
Frederick Sceweikert Rogers	Marengo
Ralph Tilden Sadler	Florida
John Sanders, Jr.	Monroe
*William George Shirling	Jefferson
*Alonzo Marion Shrader	Shelby
*Thomas William Shrader	Shelby
Clifford Alexander Singleton	Marengo
Winfield Woolf Skinner	Lee
Cecil Howard Smith	Jefferson
John Glenn Stanley	Butler
Thomas James Stephenson	Dallas
*Richard Terry	Jefferson
Arthur Joel Thigpen	Lee
James Henry Thigpen	Lowndes
Milton Boyce Thweatt	Barbour
William Burley Tisdale	Florida
Wendell Holmes Tisdale	Florida
Robert Cecil Todd	Montgomery
George Sidney Waits	Covington
James Clyde Walker	Tallapoosa
Oliver McRae Watson	Jefferson
*James Arrington Webb	Jefferson
Frederick William Wendt, Jr.	Montgomery
Edgar Elred Williams	Elmore
John Lee Williamson	Clarke
Frank Whitaker Wilmore	Lee
Riley Vance Wilson	Jefferson
Wesley Earle Wilson	Dallas
Walter Herrin Wilson	Lee
James Maltie Winchester	Jefferson
*Herschel Young	Lamar
*Francis Joseph Youngblood	Dallas

SPECIAL AND IRREGULAR STUDENTS.

Loid Hubert Anthony	Bibb
Leonidas Alfred Baarcke, Jr.	Montgomery
William Barry	**Florida**
Frank Henry Beaufort	Mobile
E. T. Brown	Jefferson
David Burchfield	Jefferson

*Not in full standing.

George Cain	Jefferson
Robert Francis Carlton	Florida
John Barbich Chiepalich	Mobile
William French Deaderick	Tennessee
Walter Marcus Deal	Houston
Augustus Baker Dean	Lee
John Heron Drewry	Barbour
Walter Carroll Ellis	Georgia
Thorwald Eros	Calhoun
Grant Blain Etheredge	Lawrence
Henry Grady Ezell	Tennessee
Robert Molton Falkner	Montgomery
John Manly Flournoy	Georgia
Lucien Brown Forbes	Lee
Edwin Thomas Fulton	Sumter
Henry Grady Goodson	Conecuh
David Lyon Gordon	Montgomery
Samuel Kennedy Gordon	Montgomery
Stephen Willis Harris	Madison
John Benson Hastings, Jr.	Montgomery
Elwood Hearne	Mobile
Fenner Burwell Hill, Jr.	Jefferson
Francis Ford Hinckley	Tuscaloosa
Odus Simion Hooper	Cleburne
John Randolph Horton	Pickett
John Ross Houser	Calhoun
Samuel Frank Houston, Jr.	Dallas
Henry Latham Howell	Pickens
William Chesley Howton	Jefferson
Oda Huey	Jefferson
Joseph Proctor Huger	Calhoun
Daniel Thomas Jones	Jefferson
Homer Walter Jones	Jefferson
Claude Eugene Kimball	Mobile
Pieter Koch	South Africa
William Henry Lanford	Arkansas
Harold Lewis	Jefferson
Monnie St. Elmo Mathews	Talladega
Americus Columbus Mitchell	Barbour
Lowe Morton	Georgia
George Edward McGough	Montgomery
Luke Pierce McLendon	Tallapoosa
Harry Clyde McNamara	Georgia
Earle Nettles	Monroe
Hubert Madison Norwood	Jefferson

Henry Pickens Norwood	Lee
Garabed Ohannes Nourian	Turkey
James Packer O'Bannon	Escambia
Richard Kennon Perry	Bullock
Richard Alexander Polglaze	Tuscaloosa
Vance Carrolton Porter	Lauderdale
Alsey Clements Pratt	Bibb
Alexander Lowry Pritchett	Choctaw
John Pritchett	Choctaw
Joshua Stephens Pruitt	South Carolina
Robert Bruce Ragsdale, Jr.	Jefferson
Feagin Rainer	Bullock
Amzi Godden Rankin	Perry
Alston Pickett Robinson	Lowndes
Cornelius Robinson	Lowndes
Chester Rogers	Washington
George English Scott	Monroe
Eli Sims Shorter	Barbour
Albert Fay Smith	Autauga
Forrester McClain Smith	Autauga
Thomas Smith, Jr.	Jefferson
Walter Bivins Smith	Dallas
Ernest Henry Standifer	Tuscaloosa
Isaac LaPrade Stewart	Escambia
John Bradley Streit	Jefferson
Ernest Chatterton Thomas	Lee
Stephen Thomas	South Carolina
Wilbur Hilton Webb	Texas
Anna Lyle Welles	Missouri
Walter John Whare	Jefferson
Robert Luther Wood, Jr.	Lowndes
Frederick Gray Young	Jefferson
William Franklin Young	Texas

DEPARTMENT OF PHARMACY.

FOUR-YEAR COURSE.

SENIOR CLASS.

William Corrie Bibb	Dallas
Milner Hubbard Eskew	Dallas
Lewis Pritchett Fort	Dallas
Jemison Mims Moseley, Jr.	Dallas

JUNIOR CLASS.

William Curtis Bethea	Lee
Henry Wells Brooks	Georgia

Roland Lee Brooks	Georgia
Charles William Crumly	Jefferson
John Emmette Harris	Wilcox
James Kirk Newell	Tallapoosa
Samuel Rutherford Pitts	Russell
Mayhall Charles Smith	Wilcox

SECOND YEAR.

James Hamilton Barr	Barbour
Lewis Dobbs Berkstresser	Tallapoosa
Walter Alexander Brown, Jr.	Houston
John Cunningham Dew	Perry
Ellis Hewitt Edwards	Walker
Erle Mortimer Hall	Lee
Louis Howle	Calhoun
James Louis Hughes	Jefferson
Eugene Preston Jones	Fayette
William Lucius Lamar, Jr.	Macon
John Ralph Lyon	Monroe
Walter Claude Michael	Marengo
Thomas Jones Morrison	Lawrence
Benjamin Franklin Moseley	Clarke
Maury Alexander McWilliams	Autauga
Thomas Herbert Neighbors	Coosa
Frederick Leigh Plaxco	Franklin
Lucy Richards	Lee
William Erskine Skeggs	Morgan
David Harmon Thweatt	Tallapoosa
Morrell Stanley Warren	Tallapoosa
Grady Webb	Lee

FIRST YEAR.

Samuel Faucett Anders	Tuscaloosa
James Edward Barnes, Jr.	Dale
Herbert Clayton	Crenshaw
Lewis Clifton Davis	Pickens
Coleman Ferrell Driver	Montgomery
William Clyde Gilchrist	Crenshaw
Sidney Findley Griffin	Tuscaloosa
Jesse Josey	Covington
Richard Irvin Kearley	Monroe
Howard Winston Lunceford	Lee
William Charles Malone, Jr.	Talladega
John Melville Miller	Walker

Paul Molyneux	Baldwin
David Reawick Murray	Jefferson
James Herman Phillips	Walker
Gray Portis Ransom	South Carolina
Amos Tuttle Smith	Georgia
Charles Stuart Stirling	Pickens
Clyde Quitman Tervin	Walker
Adolphus Evadnah Williams	Elmore
I. D. Young	Clay

COLLEGE OF VETERINARY MEDICINE AND SURGERY.

Eugene LaFayette Batson	First Year	Jefferson
Lewis Edgar Beckham	First Year	Hale
Sandford Nathan Bradshaw	Third Year	Jefferson
James Houston Breazeale	Third Year	Lee
Dillard Orsing Browning	Second Year	Lee
Elbert Rayburn Chandler	First Year	Marshall
Berney Sumner Clay	Second Year	Jefferson
Homer David Cogdell	Third Year	Bullock
Daniel Cook	First Year	Lee
McElroy Dean	First Year	Tallapoosa
Gus M. Hall	Third Year	Baldwin
Cage Head	First Year	Shelby
William Madison Hobdy	Third Year	Lee
Jacob Gilbert Horning	Second Year	Walker
Leon Ryan Kendrick	First Year	Dallas
Benjamin Joseph Lamb	First Year	Greene
George Washington Lewallen	Third Year	Jackson
John Madison Luke	Second Year	Sumter
Frederick Chunn Lunceford	First Year	Lee
Marion Ellison Meadows	Second Year	Lee
Benjamin Bears Miley	First Year	Dallas
Edgar Delon Miley	First Year	Dallas
Benjamin Homer Moon	Third Year	Clay
Adolphus Moore	Second Year	Perry
John Perry Major	Second Year	South Carolina
Curtis Logan McCoy	Third Year	Jefferson
Robert Bascom Nixon	Third Year	Sumter
Guy Maxey Parrish	Second year	Lee
William Waller Parrish	Second year	Lee
Emmett Nathaniel Patterson	First Year	Mississippi
Oscar Watson Payne	Third Year	Calhoun
Guy Julius Phelps	Third Year	Montgomery
Foster Byers Philips	Third Year	Etowah
John Adam Phillips	Second Year	Jefferson

Fletcher Burnett Prestwood	Second Year	Covington
John Thomas Prickett	Third Year	Talladega
Lamar Fontaine Pritchett	First Year	Clarke
Malcolm James Rattray	Second Year	Cherokee
Claud Wm. Marcelline Ressijac	Second Year	Mobile
Little Claud Ridley	Second Year	Georgia
Warren Frank Ridley	Second Year	Georgia
Erle Oden Sandlin	First Year	Tallapoosa
Bennett Thomas Simms	Third Year	Sumter
John Bowie Steadham	Third Year	Lee
William Lee Stroup	Second Year	Morgan
Samuel Wayne Sullivan	First Year	Lowndes
James Cleveland Webb	Third Year	Calhoun
Wilton Wendell Webb	Third Year	Lee
James Carl Williams	First Year	Mississippi
Thomas Lee Wright	Second Year	Lee
Fortescue Bryan Whitfield	Third Year	Marengo

SUMMARY.

Graduate Students	20
Senior Class	108
Junior Class	119
Sophomore Class	165
Freshman Class	147
Special and Irregular Students	84
Veterinary Medicine	51
Pharmacy	55
	749
Deduct for names counted twice	12
Total	737

NUMBER OF STUDENTS IN EACH SUBJECT OF STUDY.

English	587	Geology	77
History	365	Civil Engineering	38
French	49	Structural Design	34
German	63	Electrical Engineering	99
Latin	110	Mechanical Engineering	95
Mental Science	17	Mining Engineering	7
Political Economy	94	Architecture	27
Mathematics	508	Machine Design	88
Chemical Laboratory	147	Drawing	261
Chemistry	311	Descriptive Geometry	141
Agriculture	227	Mechanic Arts	357
Animal Industry	255	Mineralogy	24
Physics	409	Physiology	93
Botany	160	Veterinary Science	45
Entomology	30	Pharmacy	55
Horticulture	30	Veterinary Medicine	50
Forestry	22	Military Department	646
Landscape Gardening	12	Surveying	132

RESIDENCE BY STATES.

Alabama	593
Georgia	74
Florida	22
South Carolina	12
Louisiana	9
Texas	8
Mississippi	5
Tennessee	4
Missouri	2
Arkansas	1
Illinois	1
Michigan	1
North Carolina	1
Germany	1
Mexico	1
South Africa	1
Turkey	1
	737

Announcement

Auburn Preparatory Summer School

AUBURN, ALA.

August 7 to September 2, 1911

COURSES:—Students prepared for entrance to Alabama Polytechnic Institute in any or all subjects required for admission to the freshman class.

TUITION:—$5.00 to $15.00, according to number of subjects taken.

M. J. DONAHUE, A. B.,
Physical Director and Associate Professor Physical Culture
Alabama Polytechnic Institute.

MR. M. J. DONAHUE is a Bachelor of Arts of Yale University, where he took high rank in his classes. For several years he has been physical director and associate professor of physical culture in the Alabama Polytechnic Institute, giving regular instruction also in English, history and mathematics. His work has proved scholarly and efficient. He is painstaking and deeply interested in the success of his students. I commend most heartily his proposed summer preparatory work.

C. C. THACH, LL.D.,
President Alabama Polytechnic Institute.

MILITARY ORGANIZATION

SESSION 1910-1911.

President,
CHARLES C. THACH.

Commandant,
COL. BENJAMIN S. PATRICK.

Surgeon,
J. H. DRAKE.

Regimental Staff.

Cadet Captain E. F. Pearce, Adjutant.
Cadet Captain T. M. Francis, Quartermaster.
Cadet Lieutenant J. R. Liddell, Assistant Quartermaster.
Cadet Lieutenant W. S. Bonner, Commissary.
Cadet Lieutenant E. A. Hodson, Assistant Commissary.

Regimental Non-Commissioned Staff.

Cadet Sergeant W. B. Nickerson, Sergeant Major.
Cadet Sergeant J. E. Pitts, Quartermaster Sergeant.
Cadet Sergeant R. H. Spencer, Color Sergeant.
Cadet Sergeant F. L. Jenkins, Drum Major.

First Battalion.

Cadet Major, J. E. Davis.
Cadet Adjutant, R. J. Malone. Cadet Sergeant Major, S. R. Cruse.

	Company A.	Company B.	Company C.	Company G.
Cadet Captains.	J. J. Cater.		G. Lothrop.	J. M. Moseley.
Cadet First Lieutenants.	B. A. Wooten,	H. M. Johnstone,		L. P. Fort,
	G. Hicks.		J. W. Bivins,	T. J. Miles.
Cadet Second Lieutenants.	J. T. Bidgood.	L. M. Blumenfeld.	J. L. Henderson.	P. M. Smith.
Cadet First Sergeants.	D. C. Rumph.	R. M. Lilly.	H. W. Grady.	F. R. Curtis.
Cadet Sergeants.	J. B. Richardson,	T. G. Burke,	S. C. Harrell,	P. S. Avery,
	N. L. Dudley,	C. N. Thibaut,	H. W. Brooks,	T. H. Whitfield,
	A. D. Bradfield,	S. R. Pitts,	A. B. Roberts,	T. F. Drew,
	M. M. Argo.	W. Anderson.	J. F. Duggar.	W. C. White,
Cadet Corporals.	H. C. Hanlin,	R. A. McGinty,	H. G. Zeigler,	D. L. Taylor,
	T. G. Hearne,	E. E. Edmiston,	H. G. Floyd,	J. H. Wills,
	P. M. Davenport,	H. C. Sessions,	J. H. McKnight,	C. B. Moore,
	J. P. Tomberlin,	J. B. Patrick,	H. G. Fuller,	B. Shaver,
	A. L. Jerdan,	C. W. Finney,	S. M. Dillard,	H. J. Urquhart,
	H. G. Smith.	H. T. Spence.	B. R. Taylor.	H. A. Lee.

Second Battalion.

Cadet Major, R. A. Stratford.

Cadet Adjutant, L. A. Scarbrough. Cadet Sergeant Major, C. E. Sauls.

Cadet Captains.

Company D.	Company E.	Company F.
R. K. Green.		L. D. Fuller.
	Cadet First Lieutenants.	
C. T. Nichols,	E. U. Ragland,	R. W. Chapman,
R. B. Wright.	W. O. Winston.	
	Cadet Second Lieutenants.	
F. L. Owsley.	M. A. Askew.	C. B. Ketcham.
	Cadet First Sergeants.	
A. P. Aldrich.	C. P. Andrew.	C. C. Thach, Jr.
	Cadet Sergeants.	
E. D. Manning,	G. P. Brown,	R. D. Smith,
W. G. Page,	C. W. Shelverton,	J. K. Newell,
S. S. Daniell,	J. C. Postell,	A. B. Newman,
F. C. Burns.	E. A. Major.	
	Cadet Corporals.	
G. V. Stelzenmuller,	C. W. Watson,	J. E. Lacey,
R. P. Oliveros,	A. E. Ware,	C. A. Lowry,
H. L. Moore,	R. C. Lett,	H. H. Heine,
M. Pipkin,	J. Hurt,	E. A. Dixon,
W. P. Anderson.	P. W. Thompson.	S. L. McDowell,
		J. W. Alexander.

Langdon Hall

THE CADET BAND.

Session 1910-1911.

A. L. THOMAS, Bandmaster.

H. C. McGREGOR, Assistant.

Military Officers.

Cadet First Lieutenant....................................O. G. Clements
Cadet Second Lieutenant....................................J. P. Huger
Cadet Sergeant....................................C. P. Wright
Cadet Sergeant........................F. L. Jenkins, Drum Major
Cadet Corporal....................................T. H. Frost

J. J. Keyes, Honorary Member.

Musicians.

J. E. Barnes,
G. Beggs,
A. J. Bethea,
B. P. Blasingame,
A. W. Brooks,
T. W. C. Bush,
O. G. Clements,
R. F. Dail,
G. L. David,
B. Davie,
C. F. Driver,
F. E. Dunlap,
T. H. Frost,
J. G. Horning,
J. P. Huger,
E. P. Jones,
J. J. Keyes,
H. C. McGregor,
B. H. Moon,
S. P. Poyner,
M. T. Robertson,
J. B. Steadham,
S. Stein,
R. Terry,
E. C. Thomas,
C. P. Wright.

Cadets of the graduating class who were reported to the Adjutant General, U. S. Army, for publication in the "Official Army Register" as having ranked highest in the Military Department:

1889
A. St. C. Dunstan,
B. H. Crenshaw,
A. J. Burr.

1890
F. D. Milstead,
J. W. Bivins,
G. W. Emory.

1891
L. E. Baker,
C. C. Johnson,
F. J. Bivins.

1892
H. F. Dobbin,
A. L. Jones,
C. L. Brown.

1893
Joel Dumas,
C. H. Smith,
J. F. Webb.

1894
C. S. Andrews,
P. P. McKeown,
R. L. Dorsey.

1895
S. L. Coleman,
H. H. Smith,
L. B. Gammon.

1896
A. L. Alexander,
W. L. Fleming,
W. M. Williams.

1897
P. G. Clark,
G. M. Holley,
G. N. Mitcham.

1898
A. H. Clark,
A. McB. Ransom,
John Haralson.

1899
I. F. McDonnell,
A. H. Feagin,
T. W. Wert,

1900
E. M. Mason,
H. P. Powell,
C. W. Nixon.

1901
A. F. Jackson,
J. D. Foy,
P. S. Haley.

1902
W. D. Willis,
J. E. D. Yonge,
J. B. Garber.

1903
H. E. Davis,
H. M. Yonge,
T. J. Dowdell.

1904
J. McDuffie,
B. L. Shi,
George Dunglinson, Jr.

1905
R. P. Boyd,
R. M. McCulloh, Jr.,
J. H. Paterson.

1906
W. H. Foy,
F. H. Mohns,
M. A. Frazer.

1907
N. B, McLeod,
W. L. Perdue,
G. F, Lipscomb.

1908
S. A. Ellsberry,
C. M. Howard,
R. H. Liddell

1909
J. W. Powell,
S. H. Richardson,
T. Beasley.

1910
D. M. Clements,
C. C. Yonge,
J. M. Spearman.

REQUIREMENTS FOR ADMISSION

All applicants for admission should present testimonials of good moral character, and those who come from other colleges must present certificates of honorable discharge.

The college has no sub-freshman class or preparatory department. Applicants for admission to the freshman class, if deficient in not more than two subjects, may, with the approval of the examining committee, and if sixteen years of age, be admitted without full standing on those subjects. In these cases, the students will be considered as on probation and will be expected to make up their deficiencies within a reasonable time.

To enter the freshman class the applicant must be not less than fifteen years of age, and should be qualified to pass a satisfactory examination on the following subjects:

1. Geography and History of the United States.

2. English—(a) English grammar and rhetoric as contained in any standard text. (b) An examination upon sentences containing incorrect English. (c) A composition giving evidence of satisfactory proficiency in spelling, punctuation, grammar and division into paragraphs.

(d) Reading. The composition of 1911 will be upon subjects drawn from one or more of the following works in English literature:

Group 1 (two books to be selected) Shakespeare: *As You Like It; Twelfth Night; Henry V.; Julius Caesar; Merchant of Venice.*

Group 2 (one book to be selected) Bacon: *Essays;* Bunyan: *The Pilgrim's Progress, Part I.; The Sir Roger de Coverly Papers in the Spectator;* Franklin: *Autobiography.*

Group 3 (one book to be selected) Chaucer: *Prologue;* Selections from *Spenser's Faerie Queene;* Pope: *The Rape of the Lock;* Goldsmith: *The Deserted Village;* Palgrave: *Golden Treasury* (first series), books II. and III., with especial attention to Dryden, Collins, Gray, Cowper, and Burns.

Group 4 (two books to be selected) Goldsmith: *The Vicar of Wakefield;* Scott: *Ivanhoe; Quentin Durward;* Hawthorne: *The House of the Seven Gables;* Thackeray: *Henry Esmond;* Mrs. Gaskell: *Cranford;* Dickens: *A Tale of Two Cities;* George Eliot: *Silas Marner;* Blackmore: *Lorna Doone.*

Group 5 (two books to be selected) Irving: *Sketch Book;* Lamb: *Essays of Elia;* De Quincey: *Joan of Arc* and *The English Mail Coach;* Carlyle: *Heroes* and *Hero Worship;* Emerson: *Essays* (selected); Ruskin: *Sesame* and *Lilies.*

Group 6 (two books to be selected) Coleridge: *The Ancient Mariner;* Scott: *The Lady of the Lake;* Byron: *Mazeppa* and *The Prisoner of Chillon;* Palgrave: *Golden Treasury* (first series,) Book IV, with special attention to Wordsworth, Keats, and Shelley; Macaulay: *Lays of Ancient Rome;* Poe: *Poems;* Lowell: *The Vision of Sir Launfal;* Arnold: *Sohrab aod Rustum;* Longfellow: *The Courtship of Miles Standish;* Tennyson: *Gareth and Lynette, Lancelot and Elaine* and *The Passing of Arthur;* Browning: *Cavalier Tunes, The Lost Leader, How They Brought the Good News from Ghent to Aix, Evelyn Hope, Home Thoughts from Abroad, Home Thoughts from the Sea, Incident of the French Camp, The Boy and the Angel, One Word More, Herve Riel, Pheidippides.*

The candidates will be required to present evidence of a general knowledge of the subject matter, and to answer simple questions on the lives of the authors. This part of the examination is intended only to test a general knowledge of the substance of the books.

(e) *Study and Practice.* This part of the examination presupposes the thorough study of the style of the work, and will be upon the following: Shakespeare: *Macbeth;* Milton: *Lycidas, Comus, L'Allegro* and *Il Penseroso;* Burke: *Speech on Conciliation with America;* or Washington: *Farewell Address,* and Webster: *First Bunker Hill Oration;* Macaulay: *Life of Johnson;* or Carlyle: *Essay on Burns.*

Preparation and examination on these works will be necessary before the student is classed as regular in any course.

3. *Mathematics.* (a) Arithmetic, including fundamental operations; common and decimal fractions; denominate numbers; the metric system; percentage, including interest and discount; proportion. (b) Algebra to quadratic equations, as in Wentworth's Higher Algebra; especial preparation is urged in *fundamental operations, factoring, divisors, multiples,* and *fractions; a knowledge of synthetic division together with the Remainder Theorem and its applications will be required.* (c) Geometry, two books, including all original exercises.

4. Those applicants who desire to continue the study of Latin should be qualified to pass a satisfactory examination in Latin grammar and the first two books of Cæsar, or the equivalent, in addition to the above subjects.

For admission to the higher classes, students should be prepared to stand satisfactory examination in all of the studies of the lower classes, as shown in the course of study. Students applying for admission to the sophomore class will be examined in mathematics through quadratic equations in algebra, and on all of geometry. Where opportunity has not been offered to pursue special studies required at this institution, the system of equivalents will be adopted, and studies which denote an equivalent amount of discipline and training will be accepted as satisfactory. But if not prepared to pass an examination in history and chemistry at the time of application, the applicant will be required before graduation to pass a satisfactory examination on these subjects.

It is absolutely essential that students who hope to succeed should be well grounded in arithmetic, algebra, and geometry.

A working knowledge of the metric system should also be obtained.

ADMISSION ON CERTIFICATE.

Applicants will be admitted without examination on presenting a certificate from any of the *Certificate Schools* named herein.

The following educational institutions having made application to be correlated to this college and having presented an approved course of study, are hereby declared to be *Certificate Schools,* and are granted the privilege set forth in the following:

"Students from certificate schools will be admitted to fresh-
"man class *without examination* upon the certificate of the presi-
"dent or principal, showing definitely that such students have
"completed satisfactorily all the studies required for admission, as
"stated in the catalogue, and are otherwise admissible."

The privilege of admitting students to the sophomore class on certificates will be granted only to those approved schools that previously had pupils admitted to that class without conditions.

The following form of certificate will be used:

I hereby certify that A............B............has attended the (*name the school or academy*) for...........years, and has studied the following subjects:

in History ....(*name the books*)
in English ....(*name the books*)
in algebra ....(*state amount accomplished*)
in geometry ....(*state amount accomplished*)
in Latin ....(*state books read*)
and having passed a satisfactory examination on these subjects, as required in the catalogue for admision to the ....class, he is recommended for the same.

Admission by certificate is regarded as provisional.

That is, though admitted to the class for which the certificate calls, the applicant may be required to take special examination in any subject in which his preparation proves unsatisfactory, or, after a fair trial, he may be dropped to a lower class, if he fails to maintain standing in the class to which he may be admitted.

CERTIFICATE SCHOOLS.

University Military School, Mobile	J. D. Wright
Verner Military Institute, Tuscaloosa	W. H. Verner
University School, Montgomery	J. M. Starke
Mt. Willing High School, Mt. Willing	J. W. Wray
State Normal School, Jacksonville	C. W. Daugette
Male Academy, Huntsville	—
Furman Academy, Livingston	L. A. Cockrell
High School, Opelika	F. Hall
Eighth District Agricultural School, Athens	J. M. Atkinson
The Hillsborough County High School, Florida	E. M. Hyde
Edgar's School for Boys, Montgomery	R. Bliss Edgar
Auburn Female Institute	S. C. Godbold
Seventh District Agricultural School, Albertville	J. B. Hobdy
Sixth District Agricultural School, Hamilton	H. O. Sargent
Eutaw Male Academy, Eutaw	H. C. Horton
Anniston Training School for Boys	W. A. White
Prattville Academy	—
Decatur City Schools	J. M. Collier
Dayton Academy	W. H. MacKellar
Georgia Military Academy	J. C. Woodward
Jasper Graded School	W. E. Turnipseed
Tuskegee High School	W. B. Riley
Mobile Military Institute	F. R. Peterson
University High School, Birmingham, I. J. White	M. B. Dickinson
Fourth District Agricultural School, Sylacauga	Geo. H. Thigpen
Gaylesville High School	John R. Ray
Oxford Graded Schools	John R. Bell
Carrollton (Ga.) Academy	—
Ninth District Agricultural School, Blountsville	E. A. Miller
Gadsden High School	W. E. Striplin
Boyd High School, Brundidge	B. H. Boyd
Eufaula High School	F. L. McCoy
Union Springs High School	W. R. Harrison
Montgomery High School	C. L. Floyd
Brighton Academy	C. C. Slaton
Southern Agricultural School, Abbeville	W. W. Benson
Barnes' School, Montgomery	E. R. Barnes
Jackson Agricultural School	W. F. Monk
Pensacola Classical School	H. C. Armstrong

Pratt City High School	P. M. McNeil
Berry School	————
Haleyville High School, Haleyville	—— Crowell
Pittsview Public School, Pittsview	J. L. Lucas
Roanoke Normal College, Roanoke	W. H. McDaniel
Butler's School, Huntsville	S. B. Butler
Cordova High School	Harmon
Grove Hill Academy, Grove Hill	J. W. McLeod
LaFayette College, LaFayette	F. T. Appleby

ADMISSION OF YOUNG WOMEN.

The privilege of becoming students in this institution is granted by the trustees to young women of mature mind and character on the following conditions:

The applicant must be seventeen years of age, and if a candidate for a degree, be able to pass a satisfactory examination in each of the four subjects named below.

If the applicant is a candidate for admission as a special or irregular student, she must be able to pass a satisfactory examination in two of the subjects named, and may be admitted at an age less than seventeen, with a resident of Auburn acting as guardian, if application is approved by the faculty.

(a) In English—Proficiency in spelling and punctuation; grammar (Bartlett and McBain); rhetoric (Gardiner, Kittredge, and Arnold's Composition and Rhetoric and Baldwin's Rhetoric; literature, (Page's Chief American Poets and Syle's From Milton to Tennyson.)

For requirements in reading in literature, see page 51.

(b) In History—History of the United States, European history.

(c) In Mathematics—Arithmetic, algebra, including quadratic equations, series, logarithms and the theory of equations, as in Wentworth's Higher Algebra; plane and solid geometry; all of plane trigonometry as in Wentworth.

(d) In Latin—Grammar, including the forms and syntax; Latin Prose Composition; translations of selections from Caesar, Nepos, Virgil, Cicero's Orations, Cicero's Letters, or the equivalent.

The equivalents of these subjects, as in above text-books, may be substituted.

When admitted, upon complying with the conditions above stated, the applicants may enter upon the study of any subject taught and join any class, for which, upon examination, they may be found qualified. The only condition imposed will be that they engage in earnest study, and attend the exercises regularly. They will board in town with private families, and attend college only at the hours of their exercises.

ENTRANCE EXAMINATIONS.

Entrance examinations will be held on Wednesday, the 6th of September, the day on which the session opens. Candidates will also be examined during the session, when application is made for admission.

Students, upon their arrival at Auburn, will report immediately to the president. No student will be admitted to a recitation in any class previous to matriculation.

NUMBER OF EXERCISES REQUIRED.

All students are required to have *not less than fifteen* recitations per week, or their equivalent, in addition to the exercises in laboratory work, drawing, and military drill. These additional exercises occupy not less than twelve hours per week, and in all give twenty seven to thirty hours per week required in college exercises.

SPECIAL AND IRREGULAR STUDENTS.

The privilege of electing studies in the lower classes is not granted to young students nor to their parents.

The faculty will assign a student, on admission, to that class of a prescribed course for which he is qualified, and for special reasons, approved by the faculty, he may be permitted to become irregular.

Students qualified to prosecute the studies of the junior class, and those over twenty-one years of age that are not candidates for a degree, are permitted to take, with the advice of the faculty, the subjects of study for which they may on examination prove themselves qualified.

For an applicant to enter upon the study of civil, mining, electrical, or mechanical engineering as a special or irregular student he must have studied algebra through quadratics and logarithms, plane geometry, and plane trigonometry.

The professor in charge of a department will decide by examination whether a special student is prepared for admission to his class.

A student who does not take all the studies in a class of one of the degree courses, as prescribed in the catalogue, and is permitted to take an irregular course, will be assigned to a member of the faculty, who will act as his special adviser, and when his course of study has been aproved by the faculty, no other change will be permitted without the endorsement of his adviser.

Regular students who fail to pass satisfactory final examinations in any one study become irregular students. They will be classed as regular students pursuing a course for a degree, whenever they can pass the examination in those subjects in which they were found deficient.

Students, candidates for a degree who are not in full standing in all the prescribed studies of a class, rank in the military department with that class in which they have the greatest number of studies, and their names are so placed in the catalogue.

ADMISSION TO HIGHER CLASSES.

At the beginning of each term conditioned students may, on application approved by the faculty, be examined for admission to the freshman class in history, English, or mathematics, and be admitted to the freshman class in those subjects in which he passes a satisfactory examination.

Students who have completed satisfactorily all the studies of the sophomore class, as prescribed in the catalogue, in any one of the regular degree courses, can enter, without condition, the junior class in any course except that sophomore Latin is required for the general course and for the course in pharmacy, and sophomore botany is required for all the courses in the college of agricultural sciences. Physiology is required of students taking veterinary science.

Students who are admitted to the junior class from other institutions, on examination in English, Latin and mathematics, and who have not completed all the studies of the sophomore class, in order to graduate, will be required to complete the course in chemistry and history as taught in the sophomore class. In addition to these two subjects, students who thus enter the junior class of the course in agriculture, will be required to complete the course in botany and physiology in the sophomore class.

COURSE OF INSTRUCTION.

The courses of study include the physical, chemical, and natural sciences, with their applications; agriculture, botany, animal industry, horticulture; mechanics, astronomy, mathematics; drawing; civil, electrical, mechanical, and mining engineering; architecture; physiology and veterinary science, pharmacy; English, French, German, and Latin languages; history, political economy; mental and moral sciences.

The studies are arranged in regular courses so as to offer liberal and practical education as a preparation for the active pursuits of life.

There are nine degree courses for undergraduates, each leading to the degree of Bachelor of Science (B. S.) and requiring four years for its completion;

I. Course in Civil Engineering.
II. Course in Electrical Engineering.
III. Course in Mechanical Engineering.
IV. Course in Mining Engineering.

V. COURSE IN ARCHITECTURE.
VI. COURSE IN CHEMISTRY AND METALLURGY.
VII. COURSE IN AGRICULTURE.
VIII. COURSE IN PHARMACY.
IX. GENERAL COURSE.
X. TWO-YEAR COURSE IN MECHANIC ARTS.
XI. TWO-YEAR COURSE IN AGRICULTURE.
XII. TWO-YEAR COURSE IN PHARMACY. (PH. G.)
XIII. THREE-YEAR COURSE IN PHARMACY. (PH. C.)
XIV. THREE-YEAR COURSE IN VETERINARY MEDICINE. (D. V. M.)

Course I. includes the principles and applications of sciences that directly relate to civil engineering, and is adapted to those who expect to enter that profession.

Course II. includes, besides the general principles and applications of the sciences, a special course in the applications of electricity and mechanics, and is arranged to fit men for the profession of electrical engineering.

Course III. furnishes instruction in steam engineering, materials of construction, drawing, and machine design, electrical engineering, together with laboratory work. The course is intended to qualify men to fill positions in the manufacturing industries.

Course IV. includes theoretical and practical instruction in geology, mineralogy, chemistry, civil and electrical engineering, as applied to mines; mapping, exploration; boring; ventilation; timbering, and all the operations pertaining to the profession of mining engineering.

Course V. has been arranged to give a theoretical and practical knowledge of architecture in order to enable students to take advantage of office opportunities upon graduation. It embraces architectural drawing and design, history, and ornamental architectural engineering, and office practice.

Course VI. provides for thorough theoretical and practical instruction in pure and technical chemistry and metallurgy, and in the scientific branches relating thereto. Students taking this course also pursue the study of German or French during the junior and senior years, and are thus prepared to utilize for reference and for study scientific journals and works published in those languages.

Course VII. includes theoretical and practical instruction in those branches that relate to agriculture, horticulture, animal industry, botany and entomology, and is especially adapted to those who intend to devote themselves to agricultural and horticultural pursuits.

Course VIII. includes, besides the general education of Course VI. in the lower classes, a special course in pharmacy and chemistry, and is adapted to those who expect to become pharmacists, manufacturing chemists, or to enter upon the study of medicine.

Course IX. has been arranged to give a general and less technical education in subjects of science and language to meet the wants of those students who have selected no definite vocation in life, as well as those who intend ultimately to engage in teaching or in some commercial or professional business.

Courses X., XI., XII., XIII., and XIV., have been arranged for the benefit of those students who, for reasons satisfactory to themselves, are unable to continue at college four years and to take one of the regular degree courses. To enter these courses a student must be not less than seventeen years of age.

Special Course in Agriculture—Young men over twenty-one years of age who desire to study agriculture will be permitted, without examination, to enter any class under the professor of agriculture, and will be excused from reciting in any other class, from military duty, and from all other college duties; but will be under the general college regulations, and will be required to have their time fully occupied.

They may attend the lectures in agriculture in all the classes and engage in the practical work at the experiment station, in the field, stock-yard, dairy, garden, orchard, vineyard, etc., and may thus in one year acquire valuable practical knowledge of scientific agriculture.

A student who completes satisfactorily all the work of the senior class in a department, including the laboratory work, with approval of the faculty, may be awarded a certificate of proficiency in that subject.

Students who complete one of the two-year courses will, on passing a satisfactory examination, receive certificates indicating their attainments.

A student who completes the work of the two-year course in pharmacy and submits a satisfactory thesis will be granted the degree of Graduate in Pharmacy, (Ph. G.)

A student who completes the work of the three-year course in pharmacy and submits a satisfactory thesis will be granted the degree of Pharmaceutical Chemist, (Ph. C.)

A student who completes the work of the three-year course in veterinary medicine and submits a satisfactory thesis will be granted the degree of Doctor of Veterinary Medicine, (D. V. M.)

No degree or certificate of proficiency will be given in any course unless the applicant has passed a satisfactory examination in elementary English. Every candidate for a degree will be required to stand this special examination during the senior year.

Declamations and themes or orations are required of all regular students pursuing courses leading to a degree. For requirements, see Department of English.

GRADUATE COURSES.

A more extended graduate course of study may be taken by a graduate of this institution or of any college of equal grade. The completion of a course which leads to a post-graduate degree of Master of Science requires one year's residence, spent in the satisfactory prosecution of a course of study, with such laboratory work as may be approved by the faculty.

The candidate must also present to the faculty a satisfactory thesis showing independent investigation upon some subject pertaining to his course, and must pass an examination, at the close of each term, on the course of study prescribed, in which he must attain a grade of 75 per cent. The examination is written, and also oral in the presence of the faculty.

The subject for the thesis must be submitted to the faculty for approval prior to January 1st, and the thesis given to the professor of English by May 1st.

Applicants for a post-graduate degree and special students in post-senior studies are subject to the same general regulations as other students, and *pay the same fees;* but are exempt from all military duty.

The following courses are prescribed for the degree named:

1. *Master of Science.*—Studies in three departments, in two of which the candidate must have previously completed the full course of the senior class; or in special cases, with the approval of the faculty, a student may devote his full time to work in two departments, in each of which he has completed the full senior course.
2. *Master of Science in Pharmacy.*—Pharmacy and chemistry.

PROFESSIONAL DEGREES IN ENGINEERING.

The professional degree of Civil Engineer, Electrical Engineer, Mechanical Engineer, or Engineer of Mines will be conferred upon graduate students upon the satisfactory completion of the courses of study prescribed, a residence of one year at the Institute being required for the completion of these courses.

A written application stating the degree desired and the course of study selected must be submitted to the faculty at the beginning of the session. A satisfactory thesis must be submitted by May 1st.

The above named professional degrees may be conferred upon graduates of the Alabama Polytechnic Institute in civil, electrical, mechanical, and mining enginering, *six* years after graduation, provided four years of the intervening time have been spent in the practice of that branch of engineering in which the candidate graduated, and an approved thesis is submitted to the faculty with a report of the character of the work done.

The above named professional degrees may be conferred *four* years after graduation upon a graduate who has spent the entire intervening time in the practice of that branch of engineering in which he graduated and has shown unusual aptitude for and ability in the practice of his profession. To obtain the degree upon these considerations he must have filled satisfactorily a responsible position in charge of important engineering work. As evidence of these facts, he must submit with his application written testimonials from his employers or clients, and an approved thesis shall be submitted.

Application for a degree must be filed not later than January 1, of the academic year.

The following courses of study are prescribed for the degrees named:

Civil Engineer. Civil engineering and any two subjects selected from the following: mathematics, analytical mechanics, mechanical engineering, electrical engineering, mining engineering, bacteriology.

Electrical Engineer. Electrical engineering and mechanical engineering; or electrical engineering, mathematics, and civil engineering.

Mechanical Engineer. Mechanical engineering and machine design; or mechanical enginering, mathematics, and mining engineering.

Engineer of Mines. Graduate students who have completed the course in mining engineering, including German, may apply for this degree. The subjects to be pursued are mining engineering, civil engineeering, and one other technical subject related to mining and metallurgy, and approved by the faculty.

Special Students in Graduate Studies.—Students who are not graduates, but are qualified in special subjects to prosecute graduate studies, and desire to prepare themselves more thoroughly for professional or special work in any one of the departments of engineering, in chemistry, pharmacy, veterinary science, or other subjects in which instruction is given, may, when qualified, with approval of the faculty, enter this higher department of study and have all the privileges of post-graduate students.

A certificate of proficiency will be given when any one subject of a post-graduate course is satisfactorily completed.

Two degrees will not be given the same year.

LABORATORIES.

Laboratory instruction constitutes an important feature in the course of education provided for the students of this institute, and as far as possible all students are required to enter upon laboratory work in some one department.

Laboratory instruction and practical work are given in the following departments:

I. CIVIL ENGINEERING, FIELD WORK, SURVEYING, ETC.
II. ELECTRICAL ENGINEERING, TELEPHONE ENGINEERING.
III. MECHANICAL ENGINEERING.
IV. MECHANIC ARTS.
V. MINING ENGINEERING, MINERALOGY.
VI. ORE DRESSING.
VII. ARCHITECTURE.
VIII. TECHNICAL DRAWING, MACHINE DESIGN.
IX. CHEMISTRY, METALLURGY.
X. AGRICULTURE.
XI. BOTANY.
XII. PHARMACY, PHARMACEUTICAL CHEMISTRY.
XIII. HORTICULTURE.
XIV. ENTOMOLOGY.
XV. ANIMAL INDUSTRY.
XVI. HISTORY, ENGLISH.
XVII. PHYSICS.
XVIII. MILITARY TACTICS.
XIX. VETERINARY SCIENCE, BACTERIOLOGY, PHYSIOLOGY.

NOTE.—Special work in English or history may be taken by students in the general course as a substitute for laboratory work.

ORGANIZATION

The departments of instruction of the Institute have been arranged in four groups, known as the Academic College, the College of Engineering and Mines, the College of Agricultural Sciences, and the College of Veterinary Medicine and Surgery.

The Academic College offers one degree course in the general educational subjects and languages.

The College of Engineering and Mines offers degree courses in civil engineering, electrical engineering, mechanical engineering, mining engineering, and architecture.

The College of Agricultural Sciences offers regular degree courses in chemistry and metallurgy, agriculture, and pharmacy; a three-year course in pharmacy and a two-year course in pharmacy; a two-year course in agriculture.

The College of Veterinary Medicine and Surgery offers a three-year course leading to the degree of Doctor of Veterinary Medicine.

COURSES OF INSTRUCTION

COURSES OF INSTRUCTION

(Note:—The numbers in the Courses of Instruction refer to the subjects as described under " Description of Courses," pages 85 to 156 of this catalogue. The following abbreviations are used: Ac., Academic College; Eng., College of Engineering and Mines; Agr., College of Agricultural Sciences; Vet., College of Veterinary Medicine and Surgery; H. Wk., Hours per Week).

ACADEMIC COLLEGE.

GENERAL COURSE.

FRESHMAN CLASS.

First Term.

	H. Wk.
English (Ac. 101a, 102a)	5
History (Ac. 201)	2
Latin (Ac. 209)	4
Mathematics (Ac. 401, 402)	5
Drawing (Eng. 601)	3
Mechanic Arts (Eng. 301)	6
Military Drill (Ac. 600)	3

Second Term.

	H. Wk.
English (Ac. 101b, 102b)	5
History (Ac. 201)	2
Latin (Ac. 209)	4
Mathematics (Ac. 401, 402)	5
Drawing (Eng. 601)	3
Mechanics Arts (Eng. 302)	6
Military Drill (Ac. 600)	3

Third Term.

	H. Wk.
English (Ac. 101b, 102b)	5
History (Ac. 201)	3
Latin (Ac. 209)	3
Mathematics (Ac. 401, 402)	5
Drawing (Eng. 601)	3
Agriculture (Agr. 201)	2
Mechanic Arts (Eng. 303)	6
Military Drill (Ac. 600)	3

SOPHOMORE CLASS.

First Term.

	H. Wk.
Latin (Ac. 210)	5
English (Ac. 105)	4
History (Ac. 202)	3
Mathematics (Ac. 403)	5
Gen'l Chemistry (Agr. 101)	4
Drawing (Eng. 603)	3
Mechanic Arts (Eng. 304)	4
Military Drill (Ac. 600)	3

Second Term.

	H. Wk.
Latin (Ac. 210)	5
English (Ac. 105)	4
History (Ac. 202)	3
Mathematics (Ac. 403, 404)	4
Surveying (Eng. 101)	4
General Chemistry (Agr. 101)	4
Drawing (Eng. 603)	3
Mechanic Arts (Eng. 305)	4
Military Drill (Ac. 600)	3

Third Term.

	H. Wk.
Latin (Ac. 210)	5
English (Ac. 105)	4
History (x) (Ac. 204.)	3
Mathematics (Ac. 404)	4
Surveying (Eng. 101)	4
General Chemistry (Agr. 101)	4
Drawing (Eng. 603)	3
Mechanic Arts (Eng. 305)	4
Military Drill (Ac. 600)	3

(x) Botany, (Agr. 301), or Theoretical Mechanics (Ac. 503), may be substituted.

JUNIOR CLASS.

First Term.

	H. Wk.
English (Ac. 108)	3
Latin (Ac. 211)	3
French (Ac. 301a)	4
German (Ac. 305a)	4
Mathematics (Ac. 405)	3
Physics (Ac. 504)	3
Military Tactics (Ac. 601)	1
History (a) (Ac. 206)	6
Military Drill (Ac. 600)	3

Second Term.

	H. Wk.
English (Ac. 108)	3
Latin (Ac. 211)	3
French (Ac. 301b)	3
German (Ac. 305b)	3
Mathematics (Ac. 405)	3
Physics (Ac. 504)	3
Military Tactics (Ac. 601)	1
History (a) (Ac. 206)	6
Military Drill (Ac. 600)	3

Third Term.

	H. Wk.
English (Ac. 108)	3
Latin (Ac. 211)	3
French (Ac. 301c)	3
German (Ac. 305c)	4
Mathematics (Ac. 405)	3
Physics (Ac. 504)	3
Military Tactics (Ac. 602)	1
History (a) (Ac. 206)	6
Military Drill (Ac. 600)	3

(a) The student may substitute laboratory of any department of natural science for which he may be qualified.

Senior Class.

First Term.

	H. Wk.
English (Ac. 110)	2
Mental Science (Ac. 114)	2
Latin (x) (Ac. 212)	3
French (Ac. 302a)	4
German (Ac. 306a)	4
Geology (Eng. 403)	2
Military Science (Ac. 603)	1
History (a) (Ac. 206)	6

Second Term.

	H. Wk.
Political Economy (Ac. 115)	2
Mental Science (Ac. 114)	2
Latin (x) (Ac. 212)	3
French (Ac. 302b)	4
German (Ac. 306b)	4
Geology (Eng. 403)	2
Military Science (Ac. 604)	1
History (a) (Ac. 206)	6

Third Term.

	H. Wk.
Political Economy (Ac. 115)	2
Mental Science (Ac. 114)	2
Latin (x) (Ac. 212)	3
French (Ac. 302c)	4
or German (Ac. 306c)	4
Geology (Eng. 403)	2
Astronomy (Ac. 506)	2
or Teachers' Physics (Ac. 508)	2
Military Science (Ac. 605)	1
History (a) (Ac. 206)	6

(x) English Constitutional History may be substituted.

(a) The student may substitute laboratory of any department of natural science for which he may be qualified.

COLLEGE OF ENGINEERING AND MINES.

(The following studies in the freshman and sophomore classes are prescribed in all of the departments of the College of Engineering and Mines.)

Freshman Class.

First Term.

	H. Wk
English (Ac. 101a, 102a)	5
History (Ac. 201)	2
Mathematics (Ac. 401, 402)	5
Elementary Physics (Ac. 501)	3
Drawing (Eng. 601)	3
Mechanic Arts (Eng. 301)	6
Military Drill (Ac. 600)	3

Second Term.

	H. Wk.
English (Ac. 101b, 102b)	5
History (Ac. 201)	2
Mathematics (Ac. 401, 402)	5
Elementary Physics (Ac. 501)	3
Drawing (Eng. 601)	3
Mechanic Arts (Eng. 302)	6
Military Drill (Ac. 600)	3

Third Term.

	H. Wk.
English (Ac. 101b, 102b)	5
History (Ac. 201)	3
Mathematics (Ac. 401, 402)	5
Agriculture (Agr. 201, 801)	2
Drawing (Eng. 601)	3
Mechanic Arts (Eng. 303)	6
Military Drill (Ac. 600)	3

Sophomore Class.

First Term.

	H. Wk.
English (Ac. 103)	3

	H. Wk.
History (Ac. 202)	3
Mathematics (Ac. 403)	5
General Chemistry (Agr. 101)	4
Descriptive Geometry (Eng. 602)	3
Architectural Drawing (a) (Eng. 501)	3
Drawing (Eng. 603)	3
Mechanic Arts (Eng. 304)	4
Physical Laboratory (Ac. 502)	2
Military Drill (Ac. 600)	3

Second Term.

English (Ac. 104)	3
History (Ac. 202)	3
Mathematics (Ac. 403, 404)	4
Surveying (Eng. 101)	4
General Chemistry (Agr. 101)	4
Descriptive Geometry (Eng. 602)	3
Architectural Drawing (a) (Eng. 501)	3
Drawing (Eng. 603)	3
Mechanic Arts (Eng. 305)	4
Physical Laboratory (Ac. 502)	2
Military Drill (Ac. 600)	3

Third Term.

English (Ac. 104)	3
Elementary Mechanics (Ac. 503)	3
Mathematics (Ac. 404)	4
Surveying (Eng. 101)	4
General Chemistry (Agr. 101)	4
Descriptive Geometry (Eng. 602)	3
Architectural Drawing (a) (Eng. 501)	3
Drawing (Eng. 603)	3
Mechanic Arts (Eng. 305)	4
Physical Laboratory (Ac. 502)	2
Military Drill (Ac. 600)	3

(a) For those students who expect to take the course in architecture.

Surveying, Engineering 102. For students who expect to take the course in civil engineering or in mining engineering. Sixty hours per week for four weeks immediately after commencement in summer surveying camp.

IN CIVIL ENGINEERING.

Junior Class.

First Term.

	H. Wk.
English (Ac. 107)	3
Mathematics (Ac. 405)	5
Physics (Ac. 504)	3
Civil Engineering (Eng. 103)	5
Structural Drafting (Eng. 107)	5
Field and Office	6
Military Tactics (Ac. 601)	1
Machine Shop (Eng. 310)	4
or Mineralogy (Eng. 402)	4
Military Drill (Ac. 600)	3

Second Term.

English (Ac. 107)	3
Mathematics (Ac. 405, 406)	5
Physics (Ac. 504)	3
Roads and Pavements (Eng. 104)	5
Structural Drafting (Eng. 107)	5
Field Work	6
Graphic Statics (Eng. 105)	3
Machine Shop (Eng. 310)	4
or Mineralogy (Eng. 402)	4
Military Tactics (Ac. 601)	1
Military Drill (Ac. 600)	3

Third Term.

English (Ac. 107)	3
Mathematics (Ac. 406)	5
Physics (Ac. 504)	3
Mechanics of Materials (Eng. 106)	5
Structural Drafting (Eng. 107)	5
Field and Office	6
Machine Shop (Eng. 310)	4
or Mineralogy (Eng. 310)	4
Military Tactics (Ac. 602)	1
Military Drill (Ac. 600)	3

Surveying. Sixty hours per week for four weeks immediately after commencement in summer surveying camp.

SENIOR CLASS.

First Term.

	H. Wk.
English (Ac. 109)	2
Mathematics (Ac. 407)	3
Physics (Ac. 505)	2
Geology (Eng. 403)	2
Civil Engineering (Eng. 108)	5
Structural Design (Eng. 112)	5
Military Science (Ac. 603)	1
Field and Office	6

Second Term.

Political Economy (Ac. 115)	2
Mathematics (Ac. 407)	3
Physics (Ac. 505)	2
Geology (Eng. 403)	2
Civil Engineering (Eng. 110)	5
Structural Design (Eng. 112)	5
Military Science (Ac. 604)	1
Mechanical Engineering Lab. (Eng. 319)	4
Thesis (Eng. 113)	6

Third Term.

Political Economy (Ac. 115)	2
Astronomy (Ac. 506)	2
Geology (Eng. 403)	2
Sanitary Engineering (Eng. 111)	5
Structural Design (Eng. 112)	5
Military Science (Ac. 605)	1
Thesis (Eng. 113)	6

IN ELECTRICAL ENGINEERING.

JUNIOR CLASS.

First Term.

English (Ac. 107)	3
Mathematics (Ac. 405)	5
Physics (Ac. 504)	3
Electrical Eng. (Eng. 201)	3
Electrical Meas. (Eng. 205)	1
Kinematics (Eng. 604)	3
Machine Design (Eng. 606)	4
Practical Mechanics (Eng. 308)	1
Electrical Lab'y (Eng. 206)	4
Shop Work (Eng. 309)	6
Military Tactics (Ac. 601)	1
Military Drill (Ac. 600)	3

Second Term.

	H. Wk.
English (Ac. 107)	3
Mathematics (Ac. 405, 406)	5
Physics (Ac. 504)	3
Electrical Eng. (Eng. 202)	3
Electrical Meas. (Eng. 205)	1
Mechanics (Eng. 306)	3
Machine Design (Eng. 606)	4
Practical Mechanics (Eng. 308)	1
Electrical Lab'y (Eng. 207)	4
Shop Work (Eng. 309)	6
Military Tactics (Ac. 601)	1
Military Drill (Ac. 600)	3

Third Term.

English (Ac. 107)	3
Mathematics (Ac. 406)	5
Physics (Ac. 504)	3
Electrical Eng. (Eng. 203)	3
Electrical Tests (Eng. 205)	1
Strength Materials (Eng. 307)	3
Machine Design (Eng. 606)	4
Practical Mechanics (Eng. 308)	1
Electrical Lab'y (Eng. 208)	4
Shop Work (Eng. 309)	6
Military Tactics (Ac. 602)	1
Military Drill (Ac. 600)	3

SENIOR CLASS.

First Term.

English (Ac. 109)	2
Mathematics (Ac. 407)	3
Physics (Ac. 505)	2
Electrical Eng. (Eng. 210)	5
Electrical Lab'y (Eng. 213)	4
Electrical Design'g (Eng. 221)	2
Telephone Eng. (Eng. 216)	2
Telephone Lab'y (Eng 207)	2
Steam Engines (Eng. 311)	5
Mech. Eng. Lab'y (Eng. 318)	4
Machine Design (Eng. 607)	1
Machine Design (Eng. 609)	3
Military Science (Ac. 603)	1

Second Term.

Political Economy (Ac. 115)	2
Mathematics (Ac. 407)	3
Physics (Ac. 505)	2
Electrical Eng. (Eng. 211)	5
Electrical Lab. (Eng. 213)	4
Electrical Designing (E. 221)	2
Telephone Eng. (Eng. 216)	2
Telephone Lab. (Eng. 217)	2
Thermodynamics (Eng. 312)	5
Mech. Eng. Lab. (Eng. 319)	4
Machine Design (Eng. 607)	1
Machine Design (Eng. 609)	3
Military Science (Ac. 604)	1

Third Term.

	H. Wk.
Political Economy (Ac. 115)	2
Astronomy (Ac. 506)	2
Electrical Eng. (Eng. 212)	5
Electric Eng. Lab. (Eng. 213)	4
Specifications and Contracts (Eng. 219)	2
Thermodynamics (Eng. 312)	5
Mech. Eng. Lab. (Eng. 320)	4
Machine Design (Eng. 607)	1
Machine Design (Eng. 609)	3
Military Science (Ac. 605)	1

IN MECHANICAL ENGINEERING.

JUNIOR CLASS

First Term.

	H. Wk.
English (Ac. 107)	3
Mathematics (Ac. 405)	5
Physics (Ac. 504)	3
Kinematics (Eng. 604)	3
Graphic Statics (Eng. 605)	1
Machine Design (Eng. 606	4
Electrical Eng. (Eng. 204)	3
Elec. Eng. Lab'y. (Eng. 206)	4
Practical Mech. (Eng. 308)	1
Shop Work (Eng. 309)	6
Military Tactics (Ac. 601)	1
Military Drill (Ac. 600)	3

Second Term.

	H. Wk.
English (Ac. 107)	3
Mathematics (Ac. 405, 406)	5
Kinematics (Eng. 604)	3
Graphic Statics (Eng. 605)	1
Machine Design (Eng. 606)	4
Elec. Eng. (Eng. 204)	3
Elec. Eng. Laby. (Eng. 206)	4
Practical Mechs. (Eng. 308)	1
Shop Work (Eng. 309)	6
Military Tactics (Ac. 601)	1
Military Drill (Ac. 600)	3

Third Term.

	H. Wk.
English (Ac. 107)	3
Mathematics (Ac. 406)	5
Physics (Ac. 504)	3
Strength of Materials (Eng. 307)	3
Graphic Statics (Eng. 605)	1
Machine Design (Eng. 606)	4
Elec. Eng. (Eng. 204a)	3
Elec. Eng. Laby. (Eng. 208)	4
Practical Mech. (Eng. 308)	1
Shop Work (Eng. 309)	6
Military Tactics (Ac. 602)	1
Military Drill (Ac. 600)	3

Summer course, Engineering 317. Taken immediately after commencement.

SENIOR CLASS.

First Term.

	H. Wk.
English (Ac. 109)	2
Mathematics (Ac. 407)	3
Physics (Ac. 505)	2
Elec. Eng. (a) (Eng. 217)	3
Heating and Ventilation (Eng. 313)	2
Mech. of Materials (Eng. 315)	3
Power Plant Eng. (Eng. 311)	5
Machine Design (Eng. 607)	1
Machine Design (Eng. 608)	6
Elec. Eng. Laby. (Eng. 218)	4
Mech. Eng. Lab'y. (Eng. 318)	4
Military Science (Ac. 603)	1

Second Term.

	H. Wk.
Political Economy (Ac. 115)	2
Mathematics (Ac. 407)	3
Physics (Ac. 505)	2
Hydraulics (Eng. 110)	5
Thermodynamics (Eng. 312)	5
Gas Engines (Eng. 314)	2
Machine Design (Eng. 607)	1
Machine Design (Eng. 608)	6
Mech. Eng. Lab'y. (Eng. 319)	4
Military Science (Ac. 604)	1

Third Term.

	H. Wk.
Political Economy (Ac. 115)	2
Astronomy (Ac. 506)	2
Materials of Mach. (Eng. 315)	3
Thermodynamics (Eng. 312)	5
Contracts and Spec. (Eng. 219)	2
Mach Design (Eng. 607)	1
Mach. Design (Eng. 608)	6
Mech. Eng. Lab'y. (Eng. 320)	4
Military Science (Ac. 605)	1

(a) Courses 108 and 109 in civil engineering may be substituted.

IN MINING ENGINEERING.

JUNIOR CLASS.

First Term.

	H. Wk.
English (Ac. 107)	3
Mathematics (Ac. 405)	5
Physics (Ac. 504)	3

	H. Wk.
Geology (Eng. 403)	2
Drawing (Eng. 406)	4
Surveying (Eng. 103)	5
Lab. Mineralogy (Eng. 401)	4
Mach. Shop (Eng. 310)	4
Practical Mechanics (Eng. 308)	1
Military Tactics (Ac. 601)	1
Military Drill (Ac. 600)	3
Field Work (Eng. 103)	3

Second Term.

	H. Wk.
English (Ac. 107)	3
Mathematics (Ac. 405, 406)	5
Physics (Ac. 504)	3
Mechanics (Eng. 308)	3
Geology (Eng. 403)	2
Drawing (Eng. 406)	4
Mining Engineering (Eng. 404)	5
Laboratory Mineralogy (Eng. 402)	4
Machine Shop (Eng. 310)	4
Practical Mechanics (Eng. 308)	1
Military Tactics (Ac. 601)	1
Military Drill (Ac. 600)	3
Field Work (Eng. 103)	3

Third Term.

	H. Wk.
English (Ac. 107)	3
Mathematics (Ac. 406)	5
Physics (Ac. 504)	3
Strength of Materials (Eng. 307)	3
Geology (Eng. 403)	2
Drawing (Eng. 406)	4
Mining Engineering (Eng. 405)	5
Laboratory Mineralogy (Eng. 402)	4
Machine Shop (Eng. 310)	4
Practical Mechanics (Eng. 308)	1
Military Tactics (Ac. 601)	1
Military Drill (Ac. 600)	3
Field Work (Eng. 103)	3

Summer course, Engineering 407. Taken immediately after commencement.

Senior Class.

First Term.

	H. Wk.
English (Ac. 109)	2
Mathematics (Ac. 407)	3
Physics (Ac. 505)	2
Economic Geology (Eng. 408)	2
Mining Engineering (Eng. 410)	3
Electrical Eng. (Eng. 204)	2
Metallurgy (Agr. 104)	2
Drawing (Eng. 411)	3
Military Science (Ac. 603)	1
Assaying (Agr. 108c.)	8
Metallurgical Lab'y (Eng. 412)	3

Second Term.

	H. Wk.
Political Economy (Ac. 115)	2
Mathematics (Ac. 407)	3
Physics (Ac. 505)	2
Hydraulics (Eng. 110)	5
Mining Engineering (Eng. 410)	3
Electrical Engineering (Eng. 204)	2
Metallurgy (Agr. 104)	2
Drawing (Eng. 411)	3
Military Science (Ac. 604)	1
Assaying (Agr. 108c.)	8
Metallurgical Lab'y. (Eng. 412)	3

Third Term.

	H. Wk.
Political Economy (Ac. 115)	2
Astronomy (Ac. 506)	2
Economic Geology (Eng. 409)	2
Mining Engineering (Eng. 410)	3
Metallurgy (Agr. 104)	2
Drawing (Eng. 411)	3
Military Science (Ac. 605)	1
Assaying (Agr. 108c)	8
Metallurgical Lab'y. (Eng. 412)	3

IN ARCHITECTURE.

Junior Class.

First Term.

	H. Wk.
French (Ac. 301a.)	4
Mathematics (Ac. 405)	5
Physics (Ac. 504)	3
Shades and Shadows (Eng. 505)	3
Ancient Arch. History (Eng. 503)	2
Ancient Ornament (Eng. 503a)	1
Theory of Architecture (Eng. 502)	1
Drawing and Design (Eng. 504)	8

	H. Wk.
Freehand Drawing (Eng. 504a)	2
Military Tactics (Ac. 601)	1
Military Drill (Ac. 600)	3

Second Term.

French (Ac. 301b.)	3
Mathematics (Ac. 405, 406)	5
Physics (Ac. 504)	3
Shades and Shadows (Eng. 505)	3
Mediaeval Arch. Hist. (Eng. 503)	2
Mediaeval Ornament (Eng. 503a)	1
Theory of Arch. (Eng. 502)	1
Drawing and Design (Eng. 504)	8
Freehand Drawing (Eng. 504a.)	2
Military Tactics (Ac. 601)	1
Military Drill (Ac. 600)	3

Third Term.

French (Ac. 301c.)	3
Mathematics (Ac. 406)	5
Physics (Ac. 504)	3
Perspective (Eng. 508)	3
Modern Arch. Hist. (Eng. 503)	2
Modern Ornament (Eng. 503a.)	1
Theory of Arch. (Eng. 502)	1
Drawing and Design (Eng. 504)	8
Freehand Drawing (Eng. 504a.)	2
Military Tactics (Ac. 601)	1
Military Drill (Ac. 600)	3

Senior Class.

First Term.

English (Ac. 109)	2
Mathematics (Ac. 407)	3
Physics (Ac. 505)	2
Architectural Eng. (Eng. 507)	3
Spec. and Bldg. Mtls. (Eng. 508)	3
Drawing and Design (Eng. 506)	12
Freehand Drawing (Eng. 506a.)	2
Military Science (Ac. 603)	1

Second Term.

	H. Wk.
Political Economy (Ac. 115)	2
Mathematics (Ac. 407)	3
Physics (Ac. 505)	2
Arch. Engineering (Eng. 507)	3
Spec. and Bldg. Mtls. (Eng. 508)	3
Drawing and Design (Eng. 506)	12
Freehand Drawing (Eng. 506a.)	2
Military Science (Ac. 604)	1

Third Term.

Political Economy (Ac. 115)	2
Astronomy (Ac. 506)	2
Arch. Engineering (Eng. 507)	3
Spec. and Bldg. Mtls. (Eng. 508)	3
Thesis (Eng. 506)	12
Freehand Drawing (Eng. 506a)	2
Military Science (Ac. 605)	1
English (Ac. 107)	3

IN ARCHITECTURAL ENGINEERING.

Junior Class.

First Term.

English (Ac. 107)	3
Mathematics (Ac. 405)	5
Physics (Ac. 504)	3
Shades and Shadows (Eng. 505)	3
Stereotomy (Eng. 505a.)	2
Ancient Arch. Hist. (Eng. 503)	2
Ancient Ornament (Eng. 503a.)	1
Theory of Architecture (Eng. 502)	1
Drawing and Design (Eng. 504)	8
Freehand Drawing (Eng. 504a.)	2
Military Tactics (Ac. 601)	1
Military Drill (Ac. 600)	3

Second Term.

English (Ac. 107)	3
Mathematics (Ac. 405, 406)	5
Physics (Ac. 504)	3
Mechanics (Eng. 306)	3
Shades and Shadows (Eng. 505)	3
Mediaeval Arch. Hist. (Eng. 503	2
Mediaeval Ornament (Eng. 503a)	1
Theory of Arch. (Eng. 502)	1
Drawing and Design (Eng. 504)	8

	H. Wk.
Freehand Drawing (Eng. 504a.)	2
Military Tactics (Ac. 601)	1
Military Drill (Ac. 600)	3

Third Term.

English (Ac. 107)	3
Mathematics (Ac. 406)	5
Physics (Ac. 504)	3
Str. of Materials (Eng. 307)	3
Perspective (Eng. 505)	3
Modern Arch. Hist. (Eng. 503)	2
Modern Ornament (Eng. 503a.)	1
Theory of Arch. (Eng. 502)	1
Drawing and Design (Eng. 504)	8
Freehand Drawing (Eng. 504a.)	2
Military Tactics (Ac. 601)	1
Military Drill (Ac. 600)	3

Senior Cass.

First Term.

English (Ac. 109)	2
Mathematics (Ac. 407)	3
Physics (Ac. 505)	2
*Foundations (Eng. 109)	5
Heating and Vent. (Eng. 313)	2
Arch. Engineering (Eng. 507)	3
Specf. and B. M. (Eng. 508)	3
Structural Drawing (Eng. 507a.)	10
Military Science (Ac. 603)	1

Second Term.

Political Economy (Ac. 115)	2
Mathematics (Ac. 407)	3
Physics (Ac. 505)	2
Arch. Eng. (Eng. 507)	3
Specf. and B. M. (Eng. 508)	3
Structural Drawing (Eng. 507a.)	10
Laboratory Testing (Eng. 319)	4
Military Science (Ac. 604)	1

Third Term.

Political Economy (Ac. 115)	2
Physics (Ac. 505)	2
Arch. Engineering (Eng. 507)	3
Mtls. of Construction (Eng. 316)	3
Specfs. and B. Mtl. (Eng. 508)	3
Structural Drawing (Eng. 507a.)	10
Military Science (Ac. 604)	1

*Second half, first term.

TWO-YEAR COURSE IN MECHANIC ARTS.

First Year.

First Term.

	H. Wk.
English (Ac. 101a, 102a)	5
History (Ac. 201)	2
Mathematics (Ac. 401, 402)	5
Elementary Physics (Ac. 501)	3
Drawing (Eng. 601)	3
Shop Work (Eng. 301)	6
Military Drill (Ac. 600)	3

Second Term.

English (Ac. 101b, 102b)	5
History (Ac. 201)	2
Mathematics (Ac. 401, 402)	5
Elementary Physics (Ac. 501)	2
Drawing (Eng. 601)	3
Shop Work (Eng. 302)	6
Military Drill (Ac. 600)	3

Third Term.

English (Ac. 101b, 102b)	5
History (Ac. 201)	2
Mathematics (Ac. 401, 402)	5
Agriculture (Agr. 201, 801)	3
Drawing (Eng. 601)	3
Shop Work (Eng. 203)	6
Military Drill (Ac. 600)	3

Second Year.

First Term.

English (Ac. 103a.)	3
Mathematics (Ac. 403)	5
Physics (Ac. 501)	3
Drawing (Eng. 603)	3
Shop Work (Eng. 304, 309)	12
Military Drill (Ac. 600)	3

Second Term.

English (Ac. 103b.)	3
Mathematics (Ac. 404)	4
Surveying (Eng. 101)	4
Physics (Ac. 501)	3
Drawing (Eng. 603)	3
Shop Work (Eng. 305, 309)	12
Military Drill (Ac. 600)	3

Third Term.

English (Ac. 104)	3
Mathematics (Ac. 404)	4
Surveying (Eng. 101)	4
Physics (Ac. 501)	3
Drawing (Eng. 602)	3
Shop Work (Eng. 305, 309)	12
Military Drill (Ac. 600)	3

COLLEGE OF AGRICULTURAL SCIENCES.

(The following studies in the freshman and sophomore classes are prescribed for the departments of the College of Agricultural Sciences.)

FRESHMAN CLASS.

First Term.

	H. Wk.
English (Ac. 101a*, 102a)	5
History (Ac. 201)	2
Latin (a) (Ac. 209)	4
Mathematics (Ac. 401, 402)	5
Elementary Physics* (Ac. 501)	3
Drawing (Eng. 601)	3
Mechanic Arts Laboratory (Eng. 301)	6
Military Drill (Ac. 600)	3

Second Term.

	H. Wk.
English (Ac. 101b*, 102b)	5
History (Ac. 201)	2
Latin (a) (Ac. 209)	4
Mathematics (Ac. 401, 402)	5
Elementary Physics* (Ac. 501)	3
Drawing (Eng. 601)	3
Mechanic Arts Laboratory Eng. 302)	6
Military Drill (Ac. 600)	3

Third Term.

	H. Wk.
English (Ac. 101b*, 102b.)	5
History (Ac. 201)	3
Latin (a) (Ac. 209)	3
Mathematics (Ac. 401, 402)	5
Agriculture (Agr. 801, 201)	2
Drawing (Eng. 601)	3
Mechanic Arts Laboratory (Eng. 303)	6
Military Drill (Academic 600)	3

*Not required of students in pharmacy.

(a) Required of students who intend to elect the course in pharmacy.

SOPHOMORE CLASS.

First Term.

	H. Wk.
English (a) (Ac. 103)	3
Latin (b) (Ac. 210)	5
History (Ac. 202)	3
Mathematics (Ac. 403)	5
General Chemistry (Agr. 101)	4
Descriptive Geometry (d) (Eng. 602)	3
Drawing (d) (Eng. 603)	3
Physical Laboratory (d) (Ac. 502)	2
Physiology (Vet. 101)	2
Animal Industry (Agr. 802)	4
Chemical Laboratory (c) (Agr. 110a)	6
Military Drill (Ac. 600)	3

Second Term.

	H. Wk.
English (a) (Ac. 104)	3
Latin (b) (Ac. 210)	5
History (Ac. 202)	4
Mathematics (Ac. 404)	4
Surveying (Eng. 101)	4
General Chemistry (Agr. 101)	4
Descriptive Geometry (d) (Eng. 602)	3
Drawing (d) (Eng. 603)	3
Physical Laboratory (d) (Ac. 502)	2
Physiology (Vet. 101)	2
Animal Industry Laboratory (Agr. 803)	2
Agriculture (Agr. 202)	2
Chemical Laboratory (c) (Agr. 110a)	6
Military Drill (Ac. 600)	3

Third Term.

	H. Wk.
English (a) (Ac. 104)	3
Latin (b) (Ac. 210)	5
Mathematics (Ac. 404)	4
Surveying (Eng. 101)	4
General Chemistry (Agr. 101)	4
Descriptive Geometry (d) Eng. 602)	3
Drawing (d) (Eng. 603)	3
Physical Laboratory (d) (Ac. 502)	2
Botany and Botany Laboratory (Agr. 301)	7
Physiology (Vet. 101)	2
Agriculture (Agr. 203)	4
Chem. Lab'y (c) (Agr. 110a)	6
Military Drill (Ac. 600)	3

(a) Latin may be substituted. This English is not required of students who expect to elect the course in pharmacy.

(b) Required of students who intend to elect the course in pharmacy.

(c) *Six* hours in chemical laboratory are required of those students who intend to elect the course in pharmacy.

(d) Electives in chemistry and metallurgy course.

NOTE.—Drawing is required of students who elect the course in pharmacy.

IN CHEMISTRY AND METALLURGY.

JUNIOR CLASS.

First Term.

	H. Wk.
English (Ac. 107)	3
Physics (Ac. 504)	3
Industrial Chemistry (Agr. 102a)	4
Organic Chemistry (Agr. 103a)	2
Mineralogy Laboratory (Eng. 401)	4
Geology (Eng. 403)	2
Military Science (Ac. 601)	1
Chemical Laboratory (Agr. 110b)	9
Military Drill (Ac. 600)	3

Second Term.

English (Ac. 107)	3
Physics (Ac. 504)	3
Industrial Chemistry (Agr. 102a)	4
Organic Chem. (Agr. 103a)	2
Mineralogy Laboratory (Eng. 402)	4
Geology (Eng. 403)	2
Military Science (Ac. 601)	1
Chemical Laboratory (Agr. 110b)	9
Military Drill (Ac. 600)	3

Third Term.

	H. Wk.
English (Ac. 107)	3
Physics (Ac. 504)	3
Industrial Chem. (Agr. 102a)	4
Organic Chemistry (Agr. 103a)	2
Mineralogy Laboratory (Eng. 402)	4
Geology (Eng. 403)	2
Military Science (Ac. 602)	1
Chemical Laboratory (Agr. 110b)	9
Military Drill (Ac. 600)	3

SENIOR CLASS.

First Term.

English (Ac. 109)	2
Physics (a) (Ac. 505)	2
French (b) (Ac. 301a)	4
Economic Geology (Eng. 408)	2
Metallurgy (Agr. 104)	2
Engineering Chemistry (Agr. 106)	1
Theoretical Chemistry (Agr. 107)	2
Military Science (Ac. 603)	1
Chem. Lab'y and Assaying (Agr. 110d)	8
Metallurgical Designing or Metallurgical Laboratory (Eng. 412)	3

Second Term.

Political Economy (Ac. 115)	2
Physics (a) (Ac. 505)	2
French (b) (Ac. 301b)	3
Economic Geology (Eng. 408)	2
Metallurgy (Agr. 104)	2
Engineering Chemistry (Agr. 106)	1
Theoretical Chemistry (Agr. 107)	2
Military Science (Ac. 604)	1
Chem. Lab'y. and Assaying (Agr. 110d)	8
Metallurgical Designing or Metallurgical Laboratory (Eng. 412)	3

Third Term.

Political Economy (Ac. 115)	2
Astronomy (a) (Ac. 506)	2
French (b) (Ac. 301c.)	4
Economic Geology (Eng. 408)	2
Metallurgy (Agr. 104)	2
Engineering Chemistry (Agr. 106)	1
Theoretical Chemistry (Agr. 107)	2
Military Science (Ac. 605)	1
Chem. Lab'y. and Assaying Agr. 110d)	8
Metallurgical Designing or	

	H. Wk.
Metallurgical Laboratory (Eng. 412)	3

(a) Or Physical Chemistry.
(b) Or German.

IN AGRICULTURE.

Junior Class.

First Term.

English (a) (Ac. 107)	3
Physics (Ac. 504)	3
Organic Chemistry (Ag. 103b)	2
Botany and Bot. Laboratory (Agr. 302)	6
Veterinary Science and Veterinary Lab'y. (b) (Vet. 102)	5
Agriculture and Agricultural Lab'y. (c) (Agr. 204)	4
Horticulture and Horticultural Lab'y. (c) (Agr. 601)	6
Military Tactics (Ac. 601)	1
Military Drill (Ac. 600)	3

Second Term.

English (a) (Ac. 107)	3
Physics (Ac. 504)	3
Agricultural Chem. (Agr. 105)	3
Botany and Bot. Lab'y (Agr. 302)	6
Veterinary Science and Vet. Lab'y. (b) (Vet. 102)	5
Animal Industry and Animal Industry Lab'y. (c) (Agr. 804)	4
Horticulture and Horticultural Laboratory (c) (Agr. 602)	6
Military Tactics (Ac. 601)	1
Military Drill (Ac. 600)	3

Third Term.

	H. Wk.
English (a) (Ac. 107)	3
Physics (Ac. 504)	3
Agricultural Chemistry (Agr. 105)	3
Botany and Bot. Laboratory (Agr. 302)	6
Veterinary Science and Vet. Lab'y. (b) (Vet. 102)	5
Animal Industry and Animal Industry Lab'y. (c) (Agr. 804)	6
Agr. and Agr. Lab'y (c) (Agr. 205)	4
Hort. and Hort. Lab'y. (d) (Agr. 603, 603a)	4
Military Tactics (Ac. 602)	1
Military Drill (Ac. 600)	3

(a), (b) French, German or Latin may be substituted.

(c) Six hours of chemical laboratory, Agricultural 110b, may be substituted.

(d) Elective.

SENIOR CLASS.

The studies of the course in agriculture are divided into five groups, as follows:

Group "A," agriculture: Gives special prominence to crops, soils, and farm machinery.

Group "B," horticulture: Gives special reference to fruit growing, trucking, and landscape gardening.

Group "C," animal industry: Gives special prominence to all work pertaining to live stock.

Group "D," agricultural chemistry: Especially designed to prepare students for experiment station and fertilizer control work.

Goup "E," botany: Designed to train students for station work or to pursue advanced work in botany.

The elective work in each group must be approved at the beginning of the senior year by the president and the professor in charge, and with the required work must aggregate at least twenty-one hours counting two hours laboratory equal to one hour.

The giving of an elective course will be optional with the professor in charge unless it be elected by at least four students.

GROUP "A," AGRICULTURE.

First Term.

Agr. and Agr. Lab. (Agr. 206)	4
Entomology and Ent. Laboratory (Agr. 701. 702)	5
Geology (Eng. 403)	2
Military Science (Ac. 603)	1
German (a) (Ac. 305a)	4

	H. Wk.
Thesis (Agr. 209)	2

Second Term.

Agr. and Agr. Lab. (Agr. 212)	4
Forestry and Forestry Laboratory (Agr. 608)	5
Geology (Eng. 403)	2
Military Science (Ac. 604)	1
German (a) (Ac. 305b)	3
Thesis (Agr. 209)	2

Third Term.

Agr. and Agr. Lab. (Agr. 208)	4
Ent. and Ent. Lab. (Agr. 703, 704)	5
Geology (Eng. 403)	2
Military Science (Ac. 605)	1
German (a) (Ac. 305c.)	4
Thesis (Agr. 209)	2

(a) French may be substituted.

Electives. The equivalent of at least seven hours from the following subjects:

First Term.

Soils and Soils Lab. (Agr. 211)	5
Animal Ind. and Animal Ind. Laboratory (Agr. 806, 809)	4
Hor. and Hor. Lab. (Agr. 604)	5
Bot. and Bot. Lab'y (Agr. 305)	6
Vet. Science and Vet. Laboratory (Vet. 102)	5
Industrial Chem. (Agr. 102a)	3
Organic Chem. (Agr. 103a)	2
French (Ac. 302a)	4
Physics (Ac. 505)	2
Chem. Laboratory (Agr. 110)	6
Mathematics (Ac. 405, 406, or 407)	3

Second Term.

	H. Wk.
Soils and Soils Lab'y. (Agr. 211)	5
Animal Ind. and Ani. Ind. Lab. (Agr. 808)	4
Horticulture (Agr. 606)	3
Hort. Lab'y. (Agr. 607)	4
Botany and Bot. Lab'y (Agr. 306)	6
Vet. Science and Vet. Laboratory (Vet. 102)	5
Industrial Chem. (Agr. 102a)	3
Organic Chemistry (Agr. 103a)	2
French (Ac. 302b)	4
Chem. Laboratory (Agr. 110)	6
Mathematics (Ac. 405, 406, or 407)	3

Third Term.

Farm Mach. and Farm Mach. Laboratory (Agr. 210)	5
Animal Industry and Ani. Industry Laby. (Agr.)	4
Horticulture and Hort. Lab'y (Agr. 609)	7
Bot. and Bot. Lab. (Agr. 307)	6
Vet. Science and Vet. Lab'y. (Vet. 102)	5
Industrial Chemistry (Agr. 102a)	3
Organic Chem. (Agr. 103a)	2
French (Ac. 302c.)	4
Chemical Lab'y (Agr. 110)	6
Mathematics (Ac. 405, 406, or 407)	3

GROUP "B," HORTICULTURE.

First Term.

Hort. and Hort. Lab'y (Agr. 604, 605)	7
Ent. and Ent. Lab. (Ag. 701, 702)	5
Geology (Eng. 403)	2
Military Science (Ac. 603)	1
German (a) (Ac. 306a)	4
Thesis (Agr. 609)	2

Second Term.

Horticulture and Hort. Lab'y 606, 607)	7
Forestry and Forestry Lab'y (Agr. 608)	5
Geology (Eng. 403)	2
Military Science (Ac. 604)	1
German (a) (Ac. 306b)	4
Thesis (Agr. 609)	2

Third Term.

Horticulture and Horticulture Lab. (Agr. 609)	7
Entomology and Entomology Lab. (Agr. 703, 704)	5
Geology (Eng. 403)	2
Military Science (Ac. 605)	1
German (a) (Ac. 306c.)	4
Thesis (Agr. 609)	2

Electives. The equivalent of at least five hours from the subjects as listed under Group "A."

(a) French or English and Political Economy and one additional subject may be substituted.

GROUP "C," ANIMAL INDUSTRY.

First Term.

	H. Wk.
Animal Industry (Agr. 807)	2
Animal Industry Laboratory (Agr. 809)	4
Entomology and Entomology (Agr. 701, 702)	5
Geology (Eng. 403)	2
Military Science (Ac. 603)	1
German (a) (Ac. 306a)	4
Thesis	

Second Term.

Animal Industry (Agr. 807)	2
Animal Industry Laboratory (Agr. 808)	4
Forestry (b) (Agr. 608)	3
Geology (Eng. 403)	2
Military Science (Ac. 604)	1
German (a) (Ac. 306b)	4
Thesis	

Third Term.

Animal Industrv (Agr. 807)	2
Animal Industry Laboratory (Agr. 808)	4
Entomology and Entomology Lab. (Agr. 703, 704)	5
Geology (Eng. 403)	2
Military Science (Ac. 605)	1
German (a) (Ac. 306c)	4
Thesis	

Electives. The equivalent of at least six hours from the subjects listed under Group "A," or the Third Year Course in Veterinary Medicine.

GROUP "D," AGRICULTURAL CHEMISTRY.

First Term.

Chem. Lab'y. (Agr. 110)	6
Entomology (Agr. 701, 702)	5
Geology (Eng. 403)	2
Military Science (Ac. 603)	1
German (a) (Ac. 306a)	4

Second Term.

	H. Wk.
Chem. Laboratory (Agr. 110)	6
Forestry and For. Laboratory (Agr. 608)	5
Geology (Eng. 403)	2
Military Science (Ac. 604)	1
German (a) (Ac. 306b)	4

Third Term.

Chemical Lab'y (Ac. 110)	6
Entomology (Agr. 703, 704)	5
Geology (Eng. 403)	2
Military Science (Ac. 605)	1
German (a) (Ac. 306c.)	4

Electives. The equivalent of at least seven hours from the subjects as listed under Group "A."

GROUP "E," BOTANY.

First Term.

German (a) (Ac. 306a)	4
Geology (Eng. 403)	2
Organic Chem. (Agr. 103a)	2
Botany and Bot. Lab'y (Agr. 305)	6
Military Science (Ac. 603)	1
Thesis	

Second Term.

German (a) (Ac. 306b)	4
Geology (Eng. 403)	2
Organic Chemistry (Agr. 103a)	2
Bot. and Bot. Lab. (Agr. 306)	6
Military Science (Ac. 604)	1
Thesis	

Third Term.

German (a) (Ac. 306c.)	4
Geology (Eng. 403)	2
Organic Chem. (Agr. 103a)	2
Bot. and Bot. Lab. (Agr. 307)	6
Military Science (Ac. 605)	1
Thesis	

Electives. The equivalent of at least eight hours from the subjects as listed under Group "A."

TWO-YEAR COURSE IN AGRICULTURE.

FIRST YEAR.

First Term.

Dairying (Agr. 802)	2
Vet. Science (Vet. 102)	5
Chemistry (Agr. 101)	4
English (Ac. 101a)	3
Physiology (Vet. 101)	2

(a) French may be substituted.

(b) Meat and milk inspection may be substituted.

	H. Wk.
Livestock Management (Agr. 810)	2
Butter Making and Milk Testing (Agr. 802)	
Chemical Lab'y (Agr. 110a)	6
Mechanic Arts (Eng. 301)	6
Military Drill (a) (Ac. 600)	3

Second Term.

Soils and Cultivation (Agr. 202)	2
Vet. Science (Vet. 102)	5
Chemistry (Agr. 101)	4
English (Ac. 101b)	3
Physiology (Vet. 101)	2
Stock Feeding (Agr. 804)	2
Judging Livestock (Agr. 803)	4
Chemical Lab'y (Agr. 110a)	6
Mechanic Arts and Farm Machinery (Eng. 302, Agr. 210)	6
Military Drill (a) (Ac. 600)	3

Third Term.

Forage Plants (Agr. 205)	2
Vet. Science (Vet. 102)	5
Chemistry (Agr. 101)	4
English (Ac. 101b)	3
Physiology (Vet. 101)	2
Breeds of Livestock (Agr. 801)	2
Botany and Bot. Lab. (Agr. 301)	7
Farm Practice (Agr. 203, 204)	4
Chemical Lab'y (Agr. 110a)	6
Military Drill (a) (Ac. 600)	3

(a) Special agricultural students who are of age are excused from drill.

NOTE.—In case students in agriculture have conflicts in schedule, satisfactory substitutes will be accepted.

SECOND YEAR.

First Term.

Cotton Culture and Grading Agr. 206)	2
Animal Breeding (Agr. 806)	2
Vet. Science (Vet. 102)	5
Insects (Agr. 701, 702)	3
Agricultural Chemistry (Agr. 105)	3
Bot. and Bot. Lab'y (Agr. 302)	6
Corn (Agr. 204)	2
Cotton (Agr. 206)	4

	H. Wk.
Chem. Lab'y (Agr. 110b)	6

Second Term.

Miscellaneous Farm Crops (Agr. 212)	2
Stock Feeding (Agr. 804)	2
Vet. Science (Vet. 102)	5
Fruit Growing (Agr. 602)	3
Agricultural Chem. (Agr. 105)	3
Plant Breeding (Agr. 302)	6
Chem. Lab'y (Agr. 110b)	6
Hort. Lab'y (Agr. 602a)	4

Third Term.

Farm Management (Agr. 208)	2
Bacteriology (Vet. 108)	6
Vegetable Gardening (Agr. 603a)	6
Industrial Chem. (Agr. 102)	3
Diseases of Plants (Agr. 302)	6
Chem. Lab'y (Agr. 110b)	6
Hort. Lab'y (Agr. 609)	4

IN PHARMACY.

JUNIOR CLASS.

First Term.

English (a) (Ac. 107)	3
Physics (Ac. 504)	3
Bot. and Bot. Lb'y (Agr. 303)	5
Pharmacy (Agr. 401a)	3
Pharmaceutical Laboratory 401b)	3
Pharmacognosy (Agr. 402)	4
Chemical Lab'y (Agr. 110b)	6
Military Tactics (Ac. 601)	1
Military Drill (Ac. 600)	3

Second Term.

English (a) (Ac. 107)	3
Physics (Ac. 504)	3
Bot. and Bot. Lab'y (Agr. 303)	5
Pharmacy (Agr. 401a)	3
Pharmaceutical Lab'y (Agr. 401b)	6
Pharmacognosy (Agr. 402)	4
Chemical Lab'y (Agr. 110b)	6
Military Tactics (Ac. 601)	1
Military Drill (Ac. 600)	3

Third Term.

English (a) (Ac. 107)	3
Physics (Ac. 504)	3
Bot. and Bot. Lab'y (Agr. 303)	5
Pharmacy (Agr. 401a)	3
Pharmaceutical Lab'y (Agr. 401b)	6

	H. Wk.
Pharmacognosy (Agr. 402)	4
Chemical Lab'y (Agr. 110b)	6
Military Tactics (Ac. 602)	1
Military Drill (Ac. 600)	3

(a) French or German may be substituted.

Senior Class.

First Term.

Bacteriology and Bact. Laboratory (Vet. 108)	6
Organic Chemistry (Agr. 103a)	2
Pharmacy (Agr. 403a)	5
Prescriptions (Agr. 404)	4
Military Science (Ac. 603)	1
Chem. Lab'y (Agr. 110c.)	6
Pharmaceutical Laboratory (Agr. 403b)	15

Second Term.

Bacteriology and Bact. Laboratory (Vet. 108)	6
Organic Chem. (Agr. 103a)	2
Pharmacy (Agr. 403a)	5
Prescriptions (Agr. 404)	4
Military Science (Ac. 604)	1
Chem. Lab'y (Agr. 110c.)	6
Pharmaceutical Lab'y (Agr. 403b)	15

Third Term.

Therapeutics (Vet. 120)	3
Organic Chem. (Agr. 103a)	2
Pharmacy (Agr. 403a)	5
Prescriptions (Agr. 404)	4
Military Science (Ac. 605)	1
Toxicology (Agr 110e.)	6
Urinalysis (Vet. 117)	3
Pharmaceutical Lab'y (Agr. 403b)	15

TWO-YEAR COURSE IN PHARMACY.

First Year.

First Term.

English (Ac. 101a)	3
General Chem. (Agr. 101)	4
Physiology (Vet. 101)	2
Pharmacy (Agr. 401a)	3
Pharmacognosy (Agr. 402)	4
Chem. Lab'y (Agr. 110a,b)	8
Pharmaceutical Lab'y (Agr. 401b)	6
Military Drill (Ac. 600)	3

Second Term.

	H. Wk.
English (Ac. 102b)	3
General Chem. (Agr. 101)	4
Physiology (Vet. 101)	2
Pharmacy (Agr. 401a)	3
Pharmacognosy (Agr. 402)	4
Chem. Lab'y (Agr. 110a,b)	8
Pharmaceutical Lab'y Agr. 401b)	6
Military Drill (Ac. 600)	3

Third Term.

Botany and Botanical Laboratory (Agr. 301)	7
General Chem. (Agr. 101)	4
Physiology (Vet. 101)	2
Pharmacy (Agr. 401a)	3
Pharmacognosy (Agr. 402)	4
Chemical Lab'y (Agr. 110a, b)	8
Pharmaceutical Lab'y (Agr. 401b)	6
Military Drill (Ac. 600)	3

Second Year.

First Term.

Pharmacy (Agr. 403a)	5
Prescriptions (Agr. 404)	3
Pharmaceutical Laboratory (Agr. 403b)	15
Organic Chem. (Agr. 103a)	2
Chem. Lab'y (Agr. 110c)	6
Bacteriology (Vet. 108)	6
Botany and Bot. Laboratory (Agr. 303)	5
Military Drill (Ac. 600)	3

Second Term.

Pharmacy (Agr. 403a)	5
Prescriptions (Agr. 404)	3
Pharmaceutical Lab'y (Agr. 403b)	15
Organic Chem. (Agr. 103a)	2
Chem. Lab'y (Agr. 110c.)	6
Bacteriology (Vet. 108)	6
Botany and Bot. Laboratory (Agr. 303)	5
Military Drill (Ac. 600)	3

Third Term.

	H. Wk.
Pharmacy (Agr. 403a)	5
Prescriptions (Agr. 404)	3
Pharmaceutical Laboratory (Agr. 403b)	15
Organic Chem. (Agr. 103a)	2
Toxicology (Agr. 110e)	7
Therapeutics (Agr. 521)	3
Botany and Bot. Lab'y (Agr. 303)	5
Military Drill (Ac. 600)	3

THREE-YEAR COURSE IN PHARMACY.

In the first and second years the same studies are prescribed as in the Two-Year Course.

THIRD YEAR.

Entire Session.

	H. Wk.
Pharmaceutical Chem. and Lab'y (Agr. 405)	20
Chem. and Chem. Lab'y (Agr. 107, 110)	15
Bacteriological Lab'y (Vet. 108)	3

COLLEGE OF VETERINARY MEDICINE AND SURGERY.

THREE-YEAR COURSE IN VETERINARY MEDICINE.

FIRST YEAR.

First Term.

	H. Wk.
General Chem. (Agr. 101)	4
Physiology (Vet. 101)	2
English (Ac. 101a)	3
Anatomy and Anat. Laboratory (Vet. 119)	2
Histology (Vet. 104)	5
Live Stock Management (Agr. 810)	2
Chem. Lab'y (Agr. 110b)	6
Military Drill (Ac. 600)	3

Second Term.

General Chem. (Agr. 101)	4
Physiology (Vet. 101)	2
English (Ac. 101b)	3
Anatomy and Anat. Laboratory (Vet. 119)	14
Histology (Vet. 104)	5
Stock Feeding (Agr. 810)	2
Chem. Lab'y (Agr. 110b)	6
Military Drill (Ac. 600)	3

Third Term.

	H. Wk.
General Chem. (Agr. 101)	3
Physiology (Vet. 101)	2
Anatomy and Anat. Lab'y (Vet. 106)	14
Embryology (Vet. 105)	5
Judging Live Stock (Agr. 804)	2
Chem. Lab'y (Agr. 110b)	6
Military Drill (Ac. 600)	3

SECOND YEAR.

First Term.

Botany (Agr. 304)	2
Pharmacy (Agr. 403)	1
Pharmacy Lab'y (Agr. 403a)	4
Veterinary Physiology (Vet. 106)	2
Bacteriology and Bact. Laby'y (Vet. 108)	6
Obstetrics (Vet. 110)	2
Vet. Medicine (Vet. 123)	3
Anatomy and Clinical Laboratory (Vet. 119, 122)	12
Military Drill (Ac. 600)	3

Second Term.

Botany (Agr. 304)	2
Pharmacy (Agr. 403)	5
Pharmacy Lab'y (Agr. 403a)	4
Veterinary Physiology (Vet. 106)	2
Bacteriology, Pathology and Lab'y (Vet. 108, 109)	6
Obstetrics and Surgery (Vet. 110, 111)	2
Vet. Medicine (Vet. 123)	3
Anatomy and Clinical Lab'y (Vet. 119, 122)	12
Military Drill (Ac. 600)	3

Third Term.

	H. Wk.
Pharmacy (Agr. 403)	1
Pharmacy Lab'y (Agr. 403a)	4
Veterinary Physiology (Vet. 106)	2
Therapeutics (Vet. 120)	3
Surgery (Vet. 121)	3
Vet. Medicine (Vet. 123)	3
Pathology and Path. Laboratory (Vet. 109)	6
Anatomy and Clinic Laboratory (Vet. 119, 122)	12
Military Drill (Ac. 600)	3

THIRD YEAR.

First Term.

	H. Wk.
Dairying (Agr. 802)	2
Stock Breeding (Agr. 806)	2
Thereapeutics (Vet. 120)	3
Surgery (Vet. 121)	2
Veterinary Medicine (Vet. 123)	3
Infectious Diseases (Vet. 113)	2
Meat Inspection (Vet. 115)	2
Anatomy and Clinic Laboratory (Vet. 119, 122)	12
Thesis (Vet. 118)	4

Second Term.

	H. Wk.
Surgical Exercises (Vet. 112)	2
Therapeutics (Vet. 120)	3
Surgery (Vet. 121)	2
Vet. Medicine (Vet. 123)	3
Infectious Diseases (Vet. 113)	3
Meat Inspection (Vet. 115)	2
Animal Parasites (Vet. 114)	2
Clinic Lab'y (Vet. 122)	12
Thesis (Vet. 118)	4

Third Term.

	H. Wk.
Toxicology (Agr. 110e)	7
Urinalysis (Vet. 117)	3
Surgery (Vet. 121)	2
Vet. Medicine (Vet. 123)	3
Milk Inspection (Vet. 116)	3
Animal Parasites (Vet. 114)	2
Clinic Lab'y (Vet. 122)	12
Thesis (Vet. 118)	4

RSES

SCHEDULE OF EXERCISES

URS	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.	SATURDAY.
irst -9	2. Arch. History. 4. Algebra. 3. Latin. 2. Pharmacy. 2. Mech. Engineering. 1. and 2. Drawing. 1. Elec. Engineering. 1. Botany. 1. German. 1. Bacteriology. 1. An. Chem. (Mining). 2. Bacteriology (1, 2). 2. Gen. Path. (2, 3). 1. Vet. Medicine (1, 2). 2. Horticultural Lab'y.	2. Graphics. 4. Geometry. 3. Agriculture (2, 3). 3. An. Industry (1). 3. Latin. 2. Mineralogy. 2. German. 2. Botany Lab'y (Phar.) 1. and 2. Drawing. 1. Elec Engineering. 2. Machine Design. 2. Obstetrics (1, 2). 1. Inf. Diseases (1, 2).	2. Graphics. 4. Algebra. 3. Latin. 2. Pharmacy. 2. Vet. Science. 2. Mech. Engineering. 1. Botany. 1 and 2. Drawing. 1. Elec. Engineering. 1. German. 1. Dairy Farming (2). 3. Ext. Anatomy. 1. Milk Insp. (3). 1. Inf. Diseases (1, 2).	4. Geometry. 3. Latin. 3. Chemistry. 2. German. 2. Botany Lab'y (Phar.). 2. Mech. Engineering. 2 Mineralogy. 1, and 2. Drawing. 1. Elec. Engineering. 1. Therapeutics (1, 2). 3. Histology.	2. Theory of Arch. 4. Algebra. 3. Latin. 2. Pharmacy. 2. Vet. Science. 1 and 2. Drawing. 1. Elec. Engineering. 1. German. 2. Machine Design. 1. Inf. Diseases (1, 2). 3. Ext. Anatomy. 1. Milk Insp. (3). 1. Botany (Agr.).	Exercises in Elocution. 1. Farm Machinery (3). 1. Soils (1, 3). 2. Pharmacy.
ond 10	4 English. 3. Chemistry. 2. Civil Engineering. 1. Elec. Engineering. 2. Min. Engineering. 2. Latin. 1. Calculus. 1. Botany Lab'y. 1. Bacteriology. 1. An. Industry Lab'y. 2. Bacteriology (1, 2). 2. Gen. Path. (2, 3). 1. Surgery (1, 2). 2. Horticultural Lab'y.	4. History. 3. Physiology. 3. Descriptive Geom'y. 2. Elec. Engineering. 2. Civil Engineering. 1. Mech. Engineering 2. Min. Engineering. 2. Botany Lab'y. (Phar.) 2 Botany (Agr.). 1. French 1. Agriculture. 2. Mach. Design (M. E.) 1. Metallurgy. 3. Histology.	4. English. 3. Chemistry. 2. Civil Engineering. 2. Elec. Engineering. 2. Min. Engineering. 2. Latin. 2. An. Industry (3). 2. Horticulture (1, 2). 1. Calculus. 1 Pharmacognosy. 1. Botany Lab'y 3. Histology. 1 Vet. Medicine. 2. Surgery (3). 1. Soils and Farm Machinery.	4. History. 3. An. Industry (1). 3. Agriculture (2, 3). 2. Civil Engineering. 2. Botany (Agr.). 2. Elec. Engineering. 1. Mech. Engineering. 2. Min. Engineering. 2. Botany (Agr.). 1 French 1. Forestry (2). 1. Vet Science. 1. Machine Design. 1. Metallurgy. 2 Arch. History. 3. Histology. 1. Vet. Medicine.	4. English. 3. Chemistry. 2. Civil Engineering. 2. Latin. 2. Machine Design. 2. Min. Engineering. 2. Horticulture (1, 2). 2. An. Industry (3). 1. Calculus. 1 Vet Science 2 Vet. Medicine 1. Soils and Farm Machinery.	Military Drill. 1. Farm Machinery (3). 1. Soils (1, 3). 1. Arch. Drawing. 2. Arch. Drawing. 1. Machine Design. 1. Eng. Chemistry.
hird -11	4. Agriculture (3). 3. English. 2. Physics. 1. Civil Engineering. 1. Botany Lab'y. 1. Latin. 1. Bacteriology. 1. An Industry Lab'y. 1. Arch. Engineering. 2. Bacteriology (1, 2). 2. Gen. Path. (2, 3). 1. Therapeutics (2, 3).	2. Specifications and Bldg. Materials. 4 English. 3. Botany (3). 3. History. 3. Ele. Mechanics (3). 2. Agricultural and Org. Chemistry. 2. French. 2. Machine Design. 1. Telephone Eng'n. 1. Horticulture. 1. Elec. Engineering (Min. and Mech.). 1. Animal Industry. 1. Pharmacognosy. 1. Civil Engineering. 1. Botany. 3. Animal Industry. 1. Meat Inspection.	4. Agriculture (3). 3. English. 2. Physics. 1. Latin. 1. Civil Engineering. 1. Botany (Lab'y). 1. Engin. Contracts. 1. Entomology (1, 3). 1. Arch. Engineering. 1. Therapeutics (1, 2). 2. Therapeutics (3).	2. Specifications and Bldg. Materials. 4. English. 3. History. 3. Botany (3). 3. Elec. Mechanics (3). 2. Agricultural and Org. Chemistry. 2. French 2. Prac. Machinery. 1. Telephone Eng'r. 1. Horticulture. 1. Civil Engineering. 1. Elec. Engineering. (Min. and Mech.) 1. Animal Industry. 1. Pharmacognosy 1. Botany. 3. Histology. 1. Vet. Medicine.	4. History (3). 3. English. 2. Physics. 1. Civil Engineering. 1. Pharmacognosy. 1. Horticulture. 1. Arch. Engineering. 2. Therapeutics (3). 2. Obstetrics (1, 2).	Mechanic Arts. Chemical Laboratory. Elec. Laboratory. Physical Laboratory. Veterinary Clinics. Field, Civil and Mining Engineering. 1. Farm Machinery (3). 1. Soils (1, 3). 3. Surveying (3). 1 and 2. Arch. Drawing. 1. Machine Design. 1, 2, 3. Clinics.
urth -12	3. Arch. Drawing. 4 Agriculture (3). 4 Physics (1, 2). 4 Mechanic Arts. 4. Latin (1, 2). 3. Drawing. 2 Mathematics. 2. Chemistry (Ind). 2. Pharmacognosy. 1 English (1). 1. Pol Econ (2, 3). 2. Chemistry (Org.) 1 Botany. 2 Vet. Medicine.	3 Arch. Drawing. 4. Latin. 3. Drawing. 2 Agriculture (1, 3). 2. An. Industry (2). 2. Mathematics 2 Chemistry (Org.). 2. Pharmacognosy. 1. Physics. 1. Bacteriology. 1. Mental Science. 1. Entomology (1, 3). 2 Vet. Physiology. 3. Botany (Vet.).	2. Chem. Org. (2). 4. Physics (1, 2). 4. Latin (3). 4 Mechanic Arts 4 Agriculture (3). 3 History. 3 Botany (3). 3. Ele. Mechanics (3). 2. Mathematics. 2. Chemistry (Ind.). 2. Pharmacognosy. 1. English (1, 2). 1. Pol. Econ. (3). 1. Botany. 2 Gen. Path (2, 3). 1. Therapeutics Ph. (3). 2. Horticulture (3).	4. Latin. 3. Physiology. 2 Mathematics. 2 Agriculture (1, 3). 2. An Industry (2). 2. Chemistry (Org.). 1. Physics. 1. Bacteriology. 1. Mental Science. 3. Descript. Geometry. 1. Botany (Agr.). 3. Botany (Vet.).	3. Arch. Drawing. 4 Physics (1, 2). 4 Mechanics Arts. 4 Latin (1, 2). 3 Drawing 2. Mathematics. 2. Chemistry (Ind.). 2. Pharmacognosy. 1. Military Science. 2. Gen. Path. (2, 3). 2. Horticulture (3).	1. Pharmaceutical Lab. 3. Mechanic Arts. Chemical Laboratory. Electrical Laboratory Physical Laboratory. Veterinary Clinics. Field Work, Civil and Mining Engineering. 1. Machine Design. 1, 2, 3. Clinics.
ith -1	1. Arch. Drawing. 4 Drawing. 4 Mechanic Arts. 3. Mathematics. 2 English 1 Mech Engineering. 1. Agriculture. 1. French 1. Pharmacy. 1 Min Engineering. 1. Botany 1. Theoret Chemistry. 2 Vet Physiology 1 Meat Inspection	2 Arch. History. 3 Mathematics. 2. English 1. Geology 1 Pharmacy 1 Mech Engineering. 3. Surveying (2). 1. Forestry (2) 1. Therapeutics (1, 2). 2. Vet Physiology.	4. Drawing. 4. Mechanic Arts. 3 Mathematics 2 German. 2. Anal Chemistry 1 Pharmacy. 1. Min. Engineering 1. Arch Drawing 1 Mech. Engineering 2 Vet Medicine. 1 Spec Path. (1, 2). 1. Milk Insp. (3). 3. Animal Industry.	3 Mathematics 2. English. 1 Geology. 1. Mech. Engineering. 2 Graphics. 2. Vet. Medicine 3. Animal Industry. 1 Meat Inspection. 1. Pharmacy.	4. Drawing. 4. Mechanic Arts. 3 Mathematics. 2. Military Tactics. 1. Pharmacy. 1. Min Engineering. 1. Theoret. Chem. 1. D'ry Farming (2). 1. Arch. Drawing. 1. Botany. 1. Mech Engineering. 1 Surgery. 3. Histology.	3 Mechanic Arts. 4. Mechanic Arts. Chemical Laboratory. Electrical Laboratory. Veterinary Clinics. Field Work, Civil and Mining Engineering. 1, 2, 3 Clinics.
M. -6	1. 2 Arch Drawing. 4 Mechanic Arts 3 Mechanic Arts. 3 Physical Lab'y. 3 Descriptive Geom. 3 Botanical Lab'y (3). 1. 2 Field Work, Eng. 1. 2. 3. Chem Lab'y. 1. 2 Machine Work. 1. 2 Elec. Lab'y. 1 Mech Lab'y. 2. Botany (Agr.). 1. Entomology (1, 3). 1 Forestry (2). 1. 2. 3 Anatomy Lab'y. 1. 2. Clinics (1, 2). 2 Pharmacy. 1. Toxicology (3). 2. Botany (Phar.).	4. Mechanic Arts. 3 Mechanic Arts. 3 Descript Geom. 1, 2 Arch Drawing 3 An Ind Lab (1, 2). 2. Mineralogical Lab'y. 2. Agriculture (1, 3). 1 and 2 History Elec Lab'y Work. Military Drill * 1. An. Ind'y Lab'y (2). 1. Hort. Lab'y 1, 2. 3 Anatomy. 1, 2 Clinics. 2. Botany (Agr.) (2).	3 Mechanic Arts. 4 Mechanic Arts. 3 Physical Lab'y. 3 Descript Geom. 3 Botanical Lab (3). 3 Exercises in Elocu. 1. 2. 3 Chem. Lab'y 1. 2 Field Work, Eng. 1. 2 Mach. Work. 1 Mech. Laboratory. Elec. Lab'y Work. 2. Botany (Agr.) (1, 3). 1, 2 Arch Drawing 2 An. Ind Lab'y (2). 1. An Ind. Lab'y. 1, 2. 3. Anatomy. 1 Toxicology (3). 1.2. Clinics. 2. Horticulture Lab'y.	1 Spec and Bldg. Ma: 4. Mechanic Arts 3 Mechanic Arts. 3 Descrip Geom. 1 Agriculture. 2 Mineralogy Lab'y. 2. Elec Lab'y Work. 2 Horticulture Lab'y. 1, 2 History. 1 Telephone Lab'y. Military Drill.* 1. Botany. 1 Agriculture. 1, 2. 3. Anatomy. 1, 2. Clinics.	4 Mechanic Arts. 3 Mechanic Arts. 3 Physical Lab'y. 3 Exercises in Elocu. 2 French. 2 Botanical Lab'y 1, 2, 3 Chem Lab'y. 1, 2. Field Work, Eng. 1, 2 Mach Work. 1. Mech Lab'y Elec Lab'y Work. 2 Graphic Statics (2). 1. Machine Design. 1 Mech. Lab'y 2. Arch Drawing. 1, 2, 3. Anatomy. 1. Toxicology (3). 1, 2. Clinics. 1. Horticulture Lab'y.	

Chapel service daily at 7:45 a. m. *From 4:30 to 5:30 p. m.
Numbers prefixed denote classes—1 denotes senior; 2, junior, etc. Numbers affixed—(1), (2), (3), denote terms.

DESCRIPTION OF COURSES

ACADEMIC COLLEGE

DEPARTMENTS.

The Academic College comprises the following departments:

English and Political Economy.
History and Latin.
Modern Languages.
Mathematics.
Physics.
Military Science and Tactics.
Special Pedagogical Courses.

The facilities for instruction together with the laboratory equipment in each department are described under the head of "Laboratories and Facilities for Instruction," pages 9 to 20 of this catalogue.

In addition, students in the Academic College receive instruction in the following departments of the other colleges:

Mechanic Arts.
Drawing.
Geology.
Animal Industry.
Chemistry.
Botany.
Agriculture.

ENGLISH AND POLITICAL ECONOMY

PRESIDENT THACH.
PROFESSOR WIATT.
ASSOCIATE PROFESSOR WEBB.
ASSISTANT PROFESSOR RUTLAND.
INSTRUCTOR CERTAIN.
INSTRUCTOR CHILDS.
ASSISTANT COLLIER.

ENGLISH.

OBJECTS AND METHODS.

In this department the students pursue a systematic course in the English language and literature.

Language is the avenue of approach to all knowledge; the interpretation of words is the fundamental process in education of whatsoever kind. A full course in English is, therefore, considered especially important in the technical courses of study that do not include the ancient classics. Accordingly, the course in English is continued throughout the four years of the college curriculum, three hours a week, and is made obligatory upon all students, with the exception of those pursuing the first two years of the course in Latin. In this extended drill in the grammar and literature of the English language, the endeavor is made to afford a training somewhat equivalent to the ordinary course in the classical languages.

In view of the ill preparation in languages, especially in their mother tongue, exhibited by many of the candidates for admission to the freshman class, it is deemed advisable, for the sake of honest work, to devote a portion of the first year to grounding such students in the principles of grammar.

Especial attention is given to the study of the writings themselves of leading American and British authors, since direct contact with literature is considered more profitable than information merely *about* literature.

All students before classed as regular in any course leading to a degree must conform to all the requirements in English for admission as set forth on page 51.

For requirements as to thesis and as to proficiency in English for certificates and degrees, see pages 60 and 168.

THEMES, ORATIONS, DECLAMATIONS.

Theory without practice is as fruitless in the study of English as in any other department of study. Practical work is indispensable to the successful teaching of English.

Besides numerous brief papers illustrative of the subject matter of the text-books, set themes or orations are *required of all students.* For the freshman class *ten* themes a year; for the sophomore *ten;* for the senior and junior classes, *three* themes or orations each.

The old practice of committing pieces to memory for "speaking" is cultivated as a means, both of training in the art of thinking on the feet, and of storing the mind with the diction of finished specimens of English style.

On every Saturday morning, immediately after chapel services, oratorical exercises in declamation and in original orations are conducted by the Professor of English, in the presence of the faculty and students.

The *first and second terms* the students of the junior and sophomore classes are exercised in original orations and in declamations.

The *second and third terms* the members of the senior class read essays or deliver original orations.

The following courses are offered:

FRESHMAN CLASS.

101. (*a*) A review of the elements of grammar: Text-book, Bartlett and McBain's English Grammar. *Two hours, first term.*

(*b*) A study of the formation of the language and of the meaning of words: Text-book, Anderson's Study of English Words. *Two hours, second and third terms.*

102. (*a*) Composition and rhetoric: Frequent brief papers illustrating the laws studied are required, with personal conferences between the student and the instructor for the correction of individual faults. Text-book, Thomas and Howe's Composition and Rhetoric. *Three hours, first term.*

(*b*) American literature: A study of Bryant, Longfellow, Holmes, Whittier, Poe, Lowell, and Lanier. Text-book, Page's Chief American Poets. *Three hours, second and third terms.*

SOPHOMORE CLASS.

103. Rhetoric: Daily practice in paragraph writing and frequent exercises in narrative, description, exposition, and argument, with personal conferences for the correction of faults. Text-book, Baldwin's Composition: Oral and Written. *Three hours, first term.*

104. English prose and poetry: A critical study of typical prose selections and an interpretative study of representative poems. Text-book, Newcomer and Andrew's Twelve Centuries of English Poetry and Prose. In connection with this a brief study of the various periods of English literature is taken up. Text-book, Long's English Literature. *Three hours, second and third terms.*

105. Laboratory: The emphasis in the English laboratory work is upon practice, and not upon theory. Lectures are given from time to time on the few essential principles of composition, and special faults of style and errors of structure are commented on in class. Definite exercises are assigned for the practical application of the principles discussed; and through analysis of models of the forms of English prose, through the proper criticism of written exercises by the instructor, and through personal conferences with the students in all the stages of their work, an effort is made to form in the students the habit of writing with clearness and correctness. This course is intended especially for those students in Latin who do not take courses 103 and 104. *Three hours, entire year.*

106. Declamation: The sophomore class is heard weekly throughout the year in sections of ten, twice for an hour and a half in rehearsal, afterwards in the assembly hall before the body of students.

JUNIOR CLASS.

107. Lectures on the history of English literature; critical study of English classics, essays. Standard English poems, Macaulay, Carlyle, DeQuincy, etc. *Two hours, first and third terms; three hours, second term.*

107*a*. English Composition: A course in composition for juniors who take Course 107. *One hour, first and third terms.*

108. For General Course: English literature, 1750-1825. (a) Reading required from Gray, Goldsmith, Johnson, Burke, Cowper, Burns, Thomson, Collins, Fielding, Richardson. Much attention will be given to romantic movement. Study of poetics. (b) Close study of Wordsworth, Coleridge, DeQuincey, and Lamb. Scott, Jane Austin, Landor, and Hazlitt will also be studied. (b) Close study of Byron, Shelley, and Keats. *Three hours, entire year.*

SENIOR CLASS.

109. Principles of criticism, Shakespeare's Julius Caesar, Hamlet, Macbeth, etc. Dowden's Shakespeare, etc. *Two hours, first term.*

110. For General Course: English literature, 1585-1660. (a) Required reading from Greene, Marlowe, Sheakespeare, Bacon, and Milton. Study of principles of drama. Optional reading from Johnson, Beaumont and Fletcher, Spenser, Herrick, Lyly, Browne, Taylor, Walton, Bunyan and others. (b) Close study of two of Shakespeare's plays: Hamlet, As You Like It, or Macbeth and Winter's Tale, or Othello and Henry V. *Two hours, first term.*

111. Methods of teaching English. See page **102.**

112. Advanced composition: All seniors are required to write one theme each term.

GRADUATE STUDENTS.

113. Postgraduate courses: The following courses have been given:

(a) Shakespeare: Hamlet, Othello, Macbeth, Merchant of Venice, As You Like It, Henry IV, Richard III, King John.

(b) Dryden's Poetical Works; Arnold's Dramatic Poesy; Yonge's Essay on Satire; Saintsbury's Dryden; Pope's Poetical Works; Pattison's Satire; Stephen's Pope; Gosse's From Shakespeare to Pope and 18th Century Literature.

(c) English literature of the 18th century: Addison, Pope, Gray, Goldsmith, Burns, Cowper, Burke.

(d) American literature: Longfellow, Lowell, Poe.

(e) The English essay: Bacon, Addison, Steele, Swift, Johnson, Goldsmith, Macaulay, DeQuincey, Lamb, Carlyle.

(f) Milton's Poetical Works: Life, Pattison, Brooke.

(g) Elizabethan, Jacobean, and Caroline literature: Greene, Jonson, Marlowe, Webster, Beaumont and Fletcher, Browne, Herrick, Bunyan, and others.

(h) English literature, 1832-1894. *Four hours, entire year.*

PHILOSOPHY AND POLITICAL ECONOMY.

The senior class pursue the study of intellectual science, twice a week through the year, and political economy twice a week, during the second and third terms. The instruction in this department is by lectures in combination with text-books.

114. Intellectual science: Psychology defined. Value in relation to moral culture, education, and natural sciences. The relation of the soul to matter. The arguments of the materialist. Counter arguments. The faculties of the soul. The nature of consciousness. Sense perception. Fancy. Imagination. Nature of conceptions. Language. Judgment. Reasoning. Deduction. Induction, etc. Porter's Intellectual Science. *Two hours, entire session.*

115. Political economy: Value; production of wealth; land labor; capital; division of labor; distribution of wealth; wages; trades union; tariff; education, etc. Lectures by professor. Ely's Outlines of Economics. *Two hours, second and third terms.*

HISTORY AND LATIN

PROFESSOR PETRIE.

INSTRUCTOR J. A. WALKER.

INSTRUCTOR CHILDS.

ASSISTANT J. E. WALKER.

HISTORY.

In this department the aim is not so much to memorize facts as to understand them. Strong emphasis is laid on the fact that history is not a succession of isolated facts, but a progressive whole, each event being at once the cause and the effect of other events. The students are taught to investigate the growth of ideas and institutions, the rise and progress of great historical movements, and the reciprocal influences of men and circumstances. Frequent use is made of diagrams, photographs, charts, and maps, with which the department is well equipped. Instruction is given by text-books, lectures, and class discussion, but a constant effort is made to stimulate to wider reading and research in the library. The following courses are offered:

FRESHMAN CLASS.

201. History of the United States: The course consists of lectures and text-book work, and is somewhat advanced. All students who take it must have previously completed some school text-book on the history of the United States. Text-books: Hart's Formation of the Union, Wilson's Division and Reunion. *Two hours, first and second terms; three hours, third term.*

SOPHOMORE CLASS.

202. History of modern Europe: Required of all members of the sophomore class. Some previous knowledge of the subject is desirable, but not necessary. Text-book: West's History of Modern Europe. *Three hours, first and second terms.*

203. Ancient history: An extra course intended for those who are deficient on this subject. Text-book: Myers' General History, Part I. *Once a week, one term.*

204. A brief course in recent history: Not required of any students, but those who expect to take the general course may substitute it for botany or mechanics. Text-books: Robinson and Beard's Development of Modern Europe and current periodicals. *Three times a week, third term.*

SENIOR CLASS.

205. English constitutional history: A course for one year for members of the senior class. Text-book will be announced later.

JUNIOR AND SENIOR CLASSES.

206. Historical laboratory: An opportunity for advanced work in United States history for those students of the general course who elect it as laboratory work, and for any others who are properly qualified.

The chief object kept in view is training in historical research and in the formation of independent but careful opinions based on the original sources of information, as well as on the standard authorities. Emphasis is laid on the importance of securing proper material for investigation, and every incentive is given to the collection and use of new documents, papers, and letters illustrative of Southern, and especially of Alabama history. The method of work is as follows: Informal lectures are given on important and suggestive points, as: The cause of the Revolution; the Constitutional Convention; the War of 1812; the Missouri Compromise; the Monroe Doctrine; Texas and Mexico; the Compromise of 1850; the Kansas Struggle; the Dred Scott Decision; Secession. After each lecture a general discussion follows and topics connected with it are assigned to the students with an outline of the points to be investigated. The final results are collected by each student according to his own judgment in his note-book, which is then passed in to the professor for correction and suggestion. Text-book: MacDonald's Select Statutes. *Six Hours, entire session.*

International Law: A brief course is offered for those students who expect to enter the army or navy. *One hour a week.*

GRADUATE COURSE.

207. Graduate students are expected to take part in the junior and senior discussions, and will also meet with the professor for conference about their work. Each year some special field is taken for investigation and discussion. During the session of 1911-12 the topic will be the period from Jackson to the Civil War. Those who take history as their major study are expected to devote a large part of their time to research upon some topic upon which they can consult the original sources of information.

208. Teachers' course: Conferences every other week with those students who expect to teach history.

LATIN.

The objects kept in view in this department are: An accurate knowledge of the forms and syntax; a familiarity with Latin words, their etymology and their English derivatives; an appreciation of

Latin literature and an intelligent conception of Roman history and civilization both in themselves and in their effect on the modern world.

A systematic course of instruction is given in the forms and syntax. These are taught both deductively from a grammar and inductively from the text read. Translation is constantly practiced, sometimes at sight, sometimes after being assigned for preparation. English passages based on a familiar author or illustrative of special constructions are put in Latin, both orally and in writing. Great emphasis is laid on the etymology of the words in the text read.

In connection with every author studied in class, a course of reading in English is prescribed descriptive of his life, work, and times. The historical setting and the literary value of his writings are carefully discussed and frequent comparisons are made with modern authors.

In the freshman and sophomore classes the study of the language is the chief point. In the higher classes a broader view is taken. The junior class makes a special study of Roman history and Roman historians. The senior class studies Roman poetry and Roman life.

In the senior class a brief pedagogical course is given during the third term for those who expect to be teachers of Latin. This includes work on the forms and syntax, and in Caesar and Virgil.

The following courses are offered with the text-books named:

209. Freshman class: Exercises, Cicero, Sallust, or equivalent. Allen and Greenough's Latin Grammar. *Four hours. first and second terms; three hours, third term.*

210. Sophomore class: Cicero and Virgil. Allen and Greenough's Grammar, Bennett's Latin Composition. *Five hours, entire year.*

211. Junior class: Livy, Tacitus, grammar, Roman history, exercises. Allen and Greenough's Grammar, Botsford's History of Rome. *Three hours, entire year.*

212. Senior class: Horace, Plantus, Latin literature, grammar. Allen and Greenough's Grammar. *Three hours, entire year.*

213. Pedagogical course: During the spring term a pedagogical course is given in Latin. It is designed chiefly, but not exclusively, for members of the senior class. It includes a discussion of the methods of teaching forms and syntax, as well as concrete illustrations of the way to overcome difficulties in Caesar and Virgil.

MODERN LANGUAGES

PROFESSOR WIATT.

The chief aim in this department is to give the student a thorough and accurate knowledge of the elementary principles of the subjects taught, and to enable him to read with facility the ordinary French and German at sight. To train the ear, acquire a correct pronunciation and some facility in speaking, all recitations are supplemented, as far as practicable, by oral exercises in the languages themselves.

FRENCH.

The following regular courses are given:

JUNIOR CLASS.

301. (*a*) A course covering the essentials of grammar and pronunciation to enable the student to begin the reading of simple French prose. This course continues through the first term, three hours a week being given to the study of grammar and one hour to pronunciation and conversation. *Four hours, first term.*

(*b*) The second term includes a course of reading in simple prose (2 hours a week), and the continuation of grammar with translations of English into French (1 hour a week.) *Three hours, second term.*

(*c*) During the third term the reading of more advanced selections in prose and poetry is begun (2 hours a week); grammar and composition (1 hour a week); and pronunciation and conversation (1 hour a week). *Four hours, third term.*

SENIOR CLASS.

302. (*a*) A course in reading: Corneille and modern French plays (2 hours a week); laws of grammar and composition (1 hour a week); pronunciation and conversation (1 hour a week). *Four hours, first term.*

(*b*) The second term is given to the study of Racine, and the reading of modern French literature (2 hours a week), and to continued study of the structure and syntactical features of the language in connection with translations into French. *Four hours, second term.*

(*c*) The third term includes a study of Moliere (1 hour a week); the history of French Literature (1 hour a week); more advanced work in grammar and composition (1 hour a week), and pronunciation and conversation (1 hour a week). *Four hours, third term.*

303. Teachers' course: During the spring term the work of the

senior class will be so modified or supplemented, as to include a short pedagogical course for students who expect to teach French. This will consist chiefly of elementary work in grammar and syntax and a study of the best methods of giving instruction in this subject. *Third term, senior year.*

GRADUATE STUDENTS.

304. Graduate course: Offered for students who wish to pursue the study of French beyond the scope to which a two-year-course necessarily limits them. In addition to the authors studied in the lecture room, a wide and extensive reading of literature is prescribed.

TEXT-BOOKS.

First Year: Aldrich and Foster's French Grammar, and Aldrich and Foster's Reader.

Second Year: Corneille, Racine, Moliere, selected modern French plays, Duval's Histoire de la Litterature Francaise, Fraser and Squair's French Grammar, French Composition.

GERMAN.

The following regular courses are given:

JUNIOR CLASS.

305. (*a*) A course embracing the fundamental principles of grammar and the essentials of pronunciation leading to the intelligent reading and translation of simple German texts (3 hours a week), and exercises in pronunciation and conversation (1 hour a week). *Four hours, first term.*

(*b*) In the second term the reading of simple prose is begun (2 hours a week), and grammar and composition continued (1 hour a week). *Three hours, second term.*

(*c*) Reading of more difficult selections of prose and poetry is begun and continued throughout the third term (2 hours a week). Grammar and composition continued (1 hour a week), and conversational exercises (1 hour a week). *Four hours, third term.*

SENIOR CLASS.

306. (*a*) A course of reading in modern German (2 hours a week); structure and syntax of the language with translations into German (1 hour a week); conversation (1 hour a week). This is continued through the first term. *Four hours, first term.*

(b) Schiller (2 hours a week); History of German literature (1 hour a week); composition (1 hour a week). *Four hours, second term.*

(c) German lyrics and ballads (2 hours a week). German literature (1 hour a week), composition and conversation (1 hour a week). *Four hours, third term.*

307. A course for students from the scientific schools, including readings on various scientific subjects, selected to meet the requirements of the class (2 hours a week), grammar and composition (1 hour a week) and conversation (1 hour a week). *Four hours, entire session.*

308. Teachers' course. During the third term in the senior class of German, the course will be so modified, or supplemented, as to include a short pedagogical course for those students who expect to become teachers of this language.

This will consist chiefly of elementary work in grammar and syntax and a study of the best methods of giving instruction in the subject.

GRADUATE STUDENTS.

309. Advanced course: For those students who wish to pursue the study of German beyond the scope to which a two-year course necessarily limits them. Here, in addition to the authors studied in the lecture room, a wide and extensive reading of authors and literature is prescribed.

TEXT-BOOKS.

First Year: Ham and Leonard's German Grammar, Super's Reader.

Second Year: Schiller, Lessing, selected modern German plays, German Lyrics, Bernhardt's Deutsche Litteraturgeschichte, Whitney's German Grammar, Harris's German Composition.

MATHEMATICS

PROFESSOR CRENSHAW.
ASSOCIATE PROFESSOR MESSICK.
INSTRUCTOR SHI.
INSTRUCTOR PATRICK.
INSTRUCTOR STOKES.
INSTRUCTOR DONAHUE.

The courses and instruction offered in this department are designed to give the student that mental discipline and training in logic which will enable him to think and reason logically; as well as a thorough knowledge of the principles and formulas of pure mathematics and their practical applications in the engineering and other scientific professions.

The courses offered in the different classes in this department are as follows:

FRESHMAN CLASS.

401. Algebra to logarithms: *Three hours, first term; two hours, second and third terms.*

402. Geometry (completed): Especial attention being given to the solution of original exercises. *Two hours, first term; three hours, second and third terms.*

SOPHOMORE CLASS.

403. Plane Trigonometry: *Five hours, half year.*

404. Advanced Algebra: *Four hours, half year.*

JUNIOR CLASS.

405. Analytic Geometry: *Five hours, half year.*

406. Differential Calculus: *Five hours, half year.*

SENIOR CLASS.

407. Differential and Integral Calculus: *Three hours, first and second terms.*

GRADUATE STUDENTS.

408. Differential Equations: *Two hours, entire year.*

409. Methods of teaching mathematics: The department offers a course designed for teachers of elementary mathematics, or for those who expect to make this their profession. The elementary branches of mathematics will be reviewed and methods of teaching briefly discussed, keeping constantly in view the co-ordination of the lower branches with the higher. The course will include also a brief *resume* of the history of the elementary subjects; a critical examination of the extant text-books; and finally, an outline of a course of study in advanced mathematics to be pursued by the teacher. *Hours to be arranged.*

TEXT-BOOKS.

Wentworth's Geometry, Wentworth's Elementary Algebra, Hawke's Advanced Algebra, Wentworth's Trigonometry, Fine & Thompson's Analytic Geometry, Granville's Calculus, Johnson's Differential Equations, Cohen's Differential Equations.

PHYSICS

PROFESSOR SOUTHALL.

INSTRUCTOR SKINNER.

The complete course of physics extends over four years, and is designed to give, as far as possible, an adequate and correct idea of the methods of physical science and to lay the foundation for subsequent advanced work if (as must often be the case, especially in an institution such as this) the student desires to pursue the subject further or intends to engage in any of the great engineering professions of which physics is so important a basis. The lectures are illustrated by experiments; the students are required to work numerous problems and exercises.

FRESHMAN CLASS.

501. This course is very elementary. The object in view is to make the student familiar with the fundamental principles of physics. (The text-book will be announced later). *Three hours, first and second terms.*

SOPHOMORE CLASS.

502. This is a laboratory course, and deemed especially important for students of engineering, and of great advantage to such as intend to pursue the subsequent higher work in this department. The laboratory exercises are carefully selected, being designed to illustrate the fundamental methods and principles of physics, and, although the work is necessarily more or less elementary, at the same time such accuracy and precision as the conditions admit of are insisted upon, so that the student is expected to acquire a fairly correct idea of modern experimental investigation. The exercises consist of the fundamental measurements of length, mass, density, moduluses of elasticity, pendulum experiments, etc., together with a few more advanced experiments in connection with the similar properties of liquids and gases, and the general phenomena of heat and sound. The student is required to write a careful report of such experiments, entering the results of observation in tabular form, and plotting a curve wherever practicable; also describing the object, apparatus, and method, and noting sources of errors, etc. Great stress is laid upon this requirement, and reports are not accepted unless they indicate that the student has done his best in every way. *Four hours, entire year.*

503. Elementary mechanics: Lectures, text-book, problems and exercises. (Text-book will be announced later). *Three hours, third term.*

JUNIOR CLASS.

504. This is a more advanced course in general physics required of all candidates for a degree. The only preparation needed is a good working knowledge of mathematics through plane trigonometry. The course includes a series of illustrated lectures on the principles of dynamics, as applied to solids, liquids, gases, sound, and heat, in the order named. Written exercises are required each week. (Text-book to be announced later.) *Three hours, entire session.*

SENIOR CLASS.

505. This course, although more advanced than the junior course, and occasionally employing the higher mathematics, is a continuation of the work of the previous year. It might be called a course in elementary mathematical physics, and the subjects varying from year to year, that are treated in the lectures are such branches of physics as kinematics and dynamics, thermodynamics, electricity and magnetism, geometrical and physical optics, etc. The student is encouraged to solve difficulties for himself, and to read the standard treatises and original memoirs on the various topics that come under discussion. *Two hours, first and second terms.*

506. Astronomy: A brief course of lectures in descriptive astronomy. *Two hours, third term.*

(The text-books in this class vary with the changing subjects, and will be announced by the professor each year).

507. Teachers' course: In the spring term a course will be offered for those members of the senior class who expect to teach Physics. Methods of teaching the theory will be discussed and practical training will be given in the use of the laboratory for school purposes.

GRADUATE STUDENTS.

508. Physics and mechanics: This course will be designed to meet the needs of the students who take it. It will include both theoretical and experimental work in more advanced mathematical physics, or in analytical mechanics.

MILITARY SCIENCE AND TACTICS

COL. B. S. PATRICK, *Commandant.*

Military science and tactics are required by law to be taught at this institution. The law is faithfully carried out by imparting to each student, not physically incapacitated to bear arms, practical instruction in the school of the soldier, of the company, and of the battalion in close and extended order, in guard mounting, inspections, parades, reviews, etc.

Under section 1225, U. S. Revised Statutes, the college is provided with U. S. magazine rifle, calibre 30, model 1898, and accoutrements.

The following uniform of standard cadet gray cloth has been prescribed for dress: coat and trousers as worn for fatigue at West Point, with dark blue cadet cap. A neat and serviceable uniform can be obtained for fifteen dollars. This is less expensive than the usual clothing. All students are required to wear this uniform during the session.

The entire body of students is divided into companies. The officers are selected for military efficiency, good conduct, and scholarship. The commissioned officers will be selected from either the senior or the junior class, and promotion will depend on merit and not wholly on seniority.

A band, composed of cadets, furnishes appropriate music at all reviews and parades, and on other special occasions.

A student who has once accepted an office cannot resign it except for reasons entirely satisfactory to the president and the commandant. The resignation of an office will usually not be considered without first placing all the circumstances to the case before his parent or guardian.

Candidates for appointment or promotion may be required to stand an examination. Moral fitness, including demerits, will be considered.

Each company is officered by one captain and two first lieutenants, one second lieutenant, and a proper number of non-commissioned officers. The officers and non-commissioned officers are distinguished by appropriate insignia of rank. These appointments are confirmed by the president on nomination of the commandant.

On the graduation of each class the names of such students as have shown special aptitude for military service will be reported to the Adjutant-General of the U. S. Army, and the names of the three most distinguished in military science and tactics will be inserted in the U. S. Army Register, and published in general orders from headquarters of the army.

The theoretical course in military science and tactics is begun in the junior and continued through the senior year.

The following are the courses prescribed:

600. Military drill: Required of all freshmen, sophomores, and juniors not physically incapacitated to bear arms. *Three hours, entire year.*

JUNIOR CLASS.

601. Infantry drill regulations: *One hour, first and second terms.*

602. Firing regulations for small arms: *One hour, third term.*

SENIOR CLASS.

603. Security and information (Wagner): *One hour, first term.*

604. Field service regulations: *One hour, second term.*

605. Manual of guard duty. *One hour, third term.*

SPECIAL COURSES FOR TEACHERS.

The courses described here are practical courses in the methods of instruction and are designed especially for teachers in Alabama schools and for those students who expect to teach after leaving college. They are given under the direction of the various departments by instructors who have had extensive experience in teaching and who are familiar with the existing conditions in the schools in the state. While in a few of the courses the instruction consists mainly of the study of texts on methods and lectures and discussions on methods of teaching specific subjects, in most of them the subject matter as well as the method is given. If there is sufficient demand, any department of the college will offer courses which may be carried on without the formal attention of the professor, in which the reading work will be outlined and supplemented by conferences from time to time. The following courses are offered:

701. In English: This course is planned especially to suit the needs of those who are now teaching English in elementary or secondary schools and those who expect to become teachers of English. It will include discussions of the existing needs in Alabama schools, general instruction in methods of study and presentation of literature, and lectures on practical methods of teaching grammar and composition, together with actual work in this subject. It will also be the purpose of the course to examine various text-books available for instruction in English and to put the student in touch with such books as he will find useful in his work and in his own

development. *Two hours, third term.*—ASSOCIATE PROFESSOR WEBB and ASSISTANT PROFESSOR RUTLAND.

702. In history: For those who expect to teach history a conference is held once every two weeks. The chief purpose is to obtain a clear understanding of the practical difficulties that confront teachers of history and to suggest the best ways to meet them. The discussions deal with both American and European history.—PROFESSOR PETRIE.

703. In Latin: During the spring term a pedagogical course is given in Latin. It is designed chiefly, but not exclusively, for members of the senior class. It includes a discussion of methods of teaching forms and syntax, as well as concrete illustrations of the ways to overcome difficulties in Caesar and Virgil.—PROFESSOR PETRIE.

704. In French and German: During the third term in the senior class of French and German, the courses will be so modified or supplemented, as to include a short pedagogical course for those students who expect to become teachers of these languages. This will consist chiefly of elementary work in grammar and syntax and a study of the best methods of giving instruction in these subjects. *Third term.*—PROFESSOR WIATT.

705. In mathematics: The department of mathematics offers a course designed for teachers of elementary mathematics, or for those who expect to make this their profession. The elementary branches of mathematics will be reviewed with especial attention to those portions presenting unusual difficulties to beginners, or which deserve emphasis on account of their importance. Methods of teaching will be briefly discussed, and the course will keep constantly in view the co-ordination of the lower branches with the higher. It will include also a brief *resume* of the history of the elementary subjects; a critical examination of the extant text-books; and finally an outline of a course of study in advanced mathematics to be pursued by the teacher. *The hours will be arranged later.*—PROFESSOR CRENSHAW.

706. In physics: In the spring term a course will be offered for those members of the senior class who expect to teach physics. Methods of teaching the theory will be discussed and practical training will be given in the use of the laboratory for school purposes.—PROFESSOR SOUTHALL.

707. In library methods: The course offered by the library will have for its object the training of teachers in the formation, care, and use of a school library. Elementary instruction in the principles of dictionary cataloguing and of the decimal classification will be given, followed by a detailed study of reference books, together with practical problems worked out in the library. In ad-

dition there will be lectures on library organization and equipment, the routine work of a small library, and the selection and ordering of books. *Hours to be arranged.*—MISS SHIVERS.

708. In manual training: Courses in elementary wood work and iron work are offered. These courses will be adapted as far as possible to the individual needs of those taking the courses, and in addition to the shop work will include lectures and conferences on the organization of courses and the equipment of shops for manual training. *Hours to be arranged.*—PROFESSOR WILMORE.

709. In physical geography: In the course in general geology will be found much that is especially applicable to physical geography. It takes up a study of subterranean and surface agencies both as to their destructive, and constructive processes. The results of these processes are then taken up in a study of the topography of the surface of the earth under the following heads: The geographic cycle; land sculpture; topography as determined by faults and joints; adjustment of rivers; sea-coasts; mountain ranges. *Two hours, first and second terms.*—PROFESSOR BROWN.

710. In drawing and descriptive geometry: A course in the methods of teaching drawing and descriptive geometry is given to those who wish to prepare for teaching these branches . This course includes advanced work in the form of problems, supplemented by frequent conferences with the instructor, a full bibliography of works on the subjects, and an extended course in reading. Those who desire to avail themselves of an opportunity to practice the teaching of the subjects, may be permitted to attend the meetings of the large classes in elementary work for the purpose of observing methods of teaching. Those who show sufficient preparation may be allowed to assist in tutoring delinquent students and those who enter conditioned. Special attention is given to the subject of drawing as taught in high school work.—PROFESSOR FULLAN.

711. In chemistry: In this course, students who have had the necessary preliminary work in chemistry will be afforded the opportunity of taking laboratory practice in experimental chemistry for lecture purposes and for the purpose of the practical study of methods of handling classes in experimental laboratory work. Advanced students can also take the course in the history of chemistry which is provided in the senior year of the course in chemistry and metallurgy. *Hours to be arranged.*—PROFESSOR ROSS.

712. In biology (in botany and zoology): This course embraces practical and detailed work in biology, including both laboratory practice and class work in the principles of botany and zoology as well as instruction in the methods of teaching these subjects. It is especially arranged for those who expect to teach botany and zoology in the public schools, and will be supplemented by in-

dependent reading and work assigned from time to time and by conferences with the instructor. *Hours will be arranged.*—PROFESSOR LLOYD.

713. In agriculture: Methods of teaching agriculture. This is a course of lectures and laboratory and field exercises intended to meet the needs of those who expect to teach agriculture or nature study in the common schools and agriculture in the high schools. Special attention is given to plans for school gardens and the selection of material for illustrating the principles of agriculture, and practice will be given in conducting a number of simple demonstrations. Frequent excursions will be made to the fields

Lectures and laboratory, *one hour each, third term.*

Teachers and those who are preparing to teach are advised to take as many of the courses in agriculture as their time permits. It is especially desirable that those intending to take the teachers' course shall have previously taken *Agriculture* 203, or its equivalent.—PROFESSOR DUGGAR.

714. In physiology and hygiene: The department of physiology and veterinary medicine can give the following course of instruction to prospective Alabama teachers:

(*a*) Structure of human body and animals.
  (1) Study of cells, tissues, and organs.
  (2) How to use the smaller animals in taking naked eye anatomy.

(*b*) Physiological actions of the different parts and products of the animal and the human body. This embodies:
  (1) Functional tests.
  (2) Chemico-physiological tests.
  (3) Physico-physiological tests.

(*c*) Hygiene, embracing instruction in personal health problems.

(*d*) Sanitation, including health conditions of cities, homes, public buildings, farms, barns, dairies, etc.

(*e*) Care of animals on the farm and in the city.—PROFESSOR CARY.

715. In horticulture and school gardening: This course embraces instruction in nature study, the use of school gardens, and elementary landscape gardening. Though the course is largely practical in its nature, much attention is given to the methods of teaching elementary horticulture, the use of texts, and experiments suitable for elementary and high school grades. *Hours to be arranged.* —PROFESSOR WILLIAMS.

COLLEGE OF ENGINEERING AND MINES.

DEPARTMENTS.

The College of Engineering and Mines comprises the following departments:

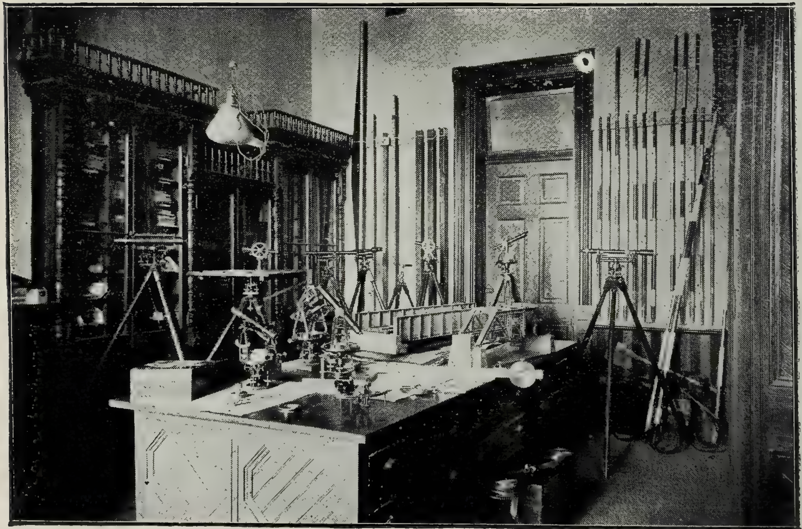
Civil Engineering.
Electrical Engineering.
Mechanical Engineering.
Mining Engineering.
Architecture.
Mechanical Drawing and Machine Design.

The facilities for instruction together with the laboratory equipment in each department are described under the head of "Laboratories and Facilities for Instruction", pages 9 to 20 of this catalogue.

In addition, students in the different departments of the College of Engineering and Mines receive instruction in other departments of the Institute as follows:

English.
Mathematics.
History and Latin.
Modern Languages.
Physics.
Chemistry.
Military Science and Tactics.

Architecture



Civil Engineering

CIVIL ENGINEERING

PROFESSOR MITCHAM.

ASSISTANT BYRD.

ASSISTANT NOBLE.

The following courses are offered in this department:

SOPHOMORE CLASS.

101. Theory of surveying: Instruction in this subject will include a course of lectures on construction, use, adjustment, and care of instruments; determination of true meridian; farm surveys; government land survey system; azimuth traverse; repetition traverse; balancing survey; theory of stadia measurements; differential and profile leveling; plane table surveys; topographical surveys. *Two hours lectures and two hours field work, second and third terms.*

102. Surveying between sophomore and junior years: For students in civil and mining engineering. This course will be given at the summer surveying camp immediately after commencement. Time will be devoted to practical field work in surveying, embracing: pacing, chaining, ranging, adjustment of instruments, angle reading, farm surveying, running land lines, dividing land, azimuth traverse, repetition traverse, differential leveling, profile leveling, triangulation, topographical surveys with transit and stadia, topographical surveys with plane table, and by other methods. Daily lectures will be given to explain work to be done, and each day's work will be calculated and plotted. *Four weeks, sixty hours a week.*

JUNIOR CLASS.

103. Theory of railroad surveying: For students in civil and mining engineering. Reconnaissance, preliminary surveys, railroad topography, location surveys, simple, reversed, and compound curves, transition curves, turnouts and crossings, construction surveys, cross sectioning, calculation of earthwork, culverts, trestles, minor structures, maps, profiles, and estimates. *Lectures and recitations five hours a week, three hours field work, and three hours office work, first term.*

104. Roads and pavements: Road economics, road location, earth roads, gravel roads, broken stone roads, miscellaneous roads, street pavements, pavement economics, street design, street drainage, curbs and gutters, pavement, foundations, asphalt pavements, brick pavements, cobblestone pavements, stone block pavements, wood block pavements, comparison of pavements, sidewalks. *Lec-*

tures and recitations five hours, second term and first half of third term.

105. Graphic statics: General resolution and composition of forces, force polygon, equilibrium polygon, determination of resultant of concurrent, non-concurrent, and parallel forces, determination of reactions and stresses in roof and bridge trusses, bending moments in beams and pins, center of gravity, and moment of inertia. *Lectures and exercises three hours, second term.*

106. Mechanics of materials: General conditions of equilibrium, classification of stresses, tensile stress, compressive stresses, shearing and torsoinal fibre, continuous beams, horizontal shear, combined stresses, eccentric loading, live loads on beams, columns, rivets and pins, properties of materials of construction, and methods of preservation. *Lectures and recitations five hours, second half third term.*

107. Structural drafting: This course is thoroughly practical, and is designed to acquaint the student with details of construction and with the practice of the principal bridge and structural companies in making shop drawings, to train him in neatness and accuracy of execution, and to prepare him for the course in structural design which he will take up in the senior year. *Five hours in drafting room, entire session.*

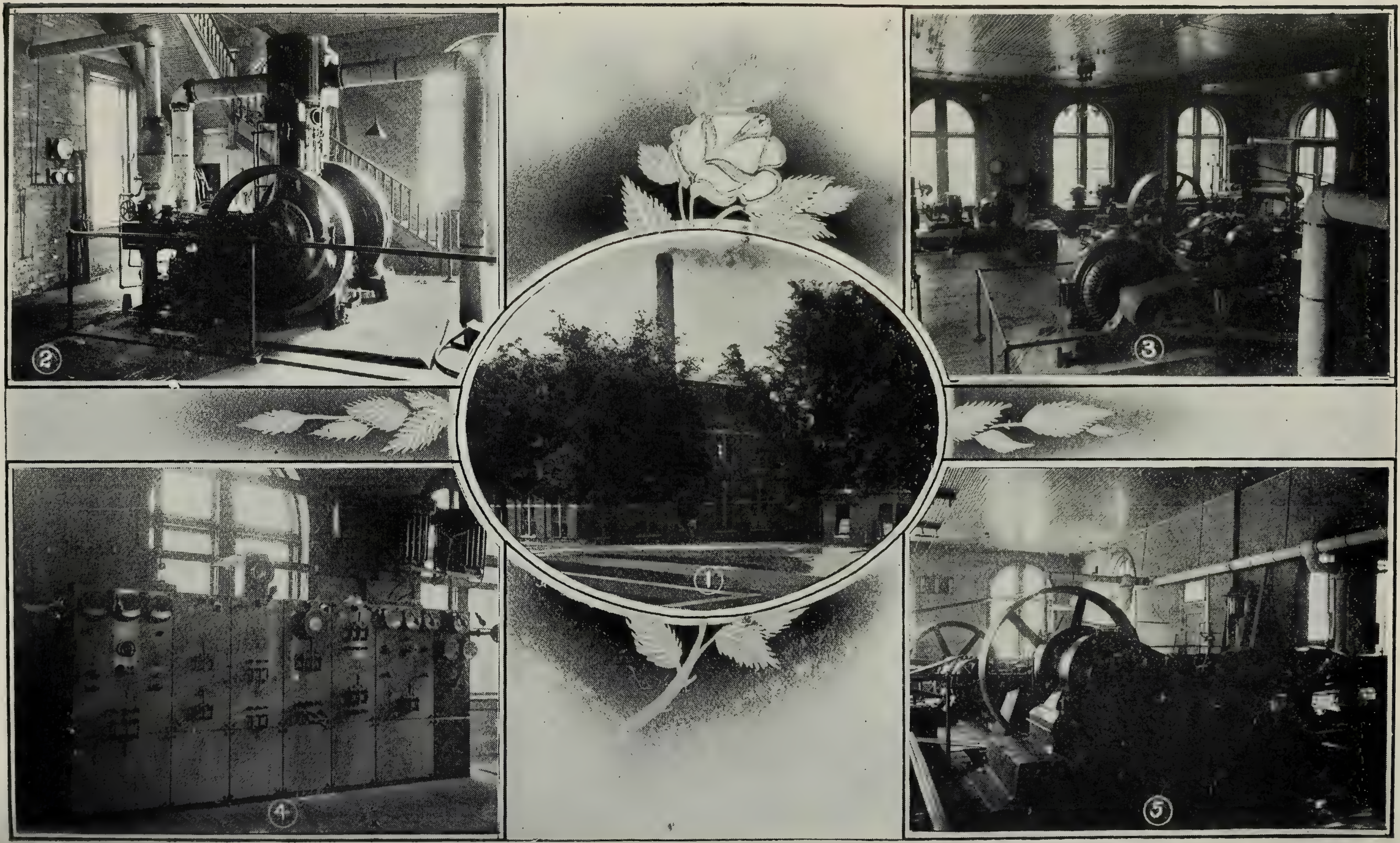
Surveying between junior and senior years: Complete surveys for a railroad about three miles in length, including setting all stakes ready for construction; surveys for development of water power; measurement of discharge of streams; surveying for locating, relocating, and otherwise improving public roads; other problems in higher surveying that the time may permit. *Four weeks in summer surveying camp, sixty hours a week.*

SENIOR CLASS.

108. Theory of bridge analysis: Solid-built beams and I-beams, plate girders, determination of dead-load stresses, live-load stresses in trusses, types of trusses, steel arches, suspension bridges, draw bridges, roof trusses, derricks, bridge erection. *Lectures and recitations five hours, first half first term.*

109. Masonry construction and foundations: Masonry walls, masonry dams, retaining walls, masonry arches, natural building stones, artificial stone; cements, limes, mortars, plain and reinforced concrete, foundations on land, foundations under water. *Lectures and recitations five hours, second half first term.*

110. Hydraulics: For students in civil, mining, and mechanical engineering. Hydrostatics, theoretical hydraulics, instruments, flow through orifices, flow over weirs, flow through tubes, flow through pipes, flow in open channels and conduits, flow of rivers, water



Power House Views

supply and water power, water wheels, turbines, pumps and pumping. *Lectures and recitations five hours, second term.*

111. Sanitary engineering: Sanitary science, water and its purification, water supply systems, sewerage systems, sewage disposal, disposal of garbage and refuse. *Lectures and recitations five hours, third term.*

112. Structural design: In this course the student devotes the required time to the practical design of engineering structures, completing designs for a plate girder railroad bridge, a steel highway bridge, a short span railway truss bridge, a roof truss, a knee braced steel building, and such other designs as the time will permit. This work may be varied to a considerable extent to fit the needs or inclinations of individual students, especially when they choose a structural subject for thesis work. *Five hours, entire session.*

113. Thesis: Each candidate for a degree must select and announce the subject of his thesis not later than January 1st, and from that time till May 1st, when it must be completed and handed in, will devote six hours a week to the collection of data and the preparation of his thesis. The thesis may consist of an original design for some engineering work, as a bridge, water supply system, sewerage system, sewage disposal plant, surveys and estimates for a railroad two or three miles long, development of a water power, or a written report showing methods and results of original investigation of some subject connected with engineering.

114. Course for graduate students: This course is arranged each year to suit the needs of students who desire to take it, and is open to those who have completed the undergraduate work in civil engineering.

ELECTRICAL ENGINEERING

PROFESSOR DUNSTAN.

ASSOCIATE PROFESSOR HILL.

ASSISTANT SKINNER.

Courses of instruction offered:

JUNIOR CLASS.

201. Elementary theory of electricity and magnetism: A detailed study of the fundamental phenomena and laws of the subject. *Three hours, first term.*

202. Direct current machinery: Lectures and recitations on the principles of design, construction, installation, and operation of direct current generators and motors. This course treats in de-

tail of the selection of machinery for given conditions, performance guarantees, acceptance tests for heating, regulation, efficiencies, etc., parallel running, troubles and remedies, and repairs. A large number of carefully selected problems are assigned for solution and every effort is made to have the course cover not only the fundamental principles but also the broader engineering problems connected with the choice and use of this class of machinery. *Three hours, second term.*

203. Central station appliances and distribution for lighting and power service by direct currents: This course treats in detail of switch boards and appliances, calculation of circuits of various kinds, arc and incandescent lighting, metering, systems of charging for service, economics of generating plants. *Three hours, third term.*

204. Elementary theory of electricity and magnetism: For non-electrical engineering students. This course is similar to course 201, though not so detailed in treatment. *Two hours, first and second terms.*

204-a. The construction and operation of both direct and alternating current machines; tests for efficiency, regulation and heating; the generation and distribution of electric power. In this course, it is intended to cover the application of electricity to the operation of machinery. For non-electrical students. *Two hours per week, third term.*

205. Electrical measurements and tests: For students in electrical engineering and mechanical engineering. The course consists of lectures and recitations upon the measurement of current, voltage resistance, capacities, magnetic measurements, stray power, brake tests, heat runs, and related subjects. *One hour, entire session.*

206. Laboratory work: For students in electrical engineering and mechanical engineering. The course consists of galvanometer work, resistance measurements of various kinds, magnetic measurements and various tests. *Four hours, first term.*

207. Laboratory work: For students in electrical engineering and mechanical engineering. This term is devoted to the operation of direct current motors and dynamos, characteristics of direct current machinery, methods of adjusting, compounding, etc. *Four hours, second term.*

208. Laboratory work: For students in electrical engineering and mechanical engineering. Efficiency tests, location of troubles on machine and line, switch boards and appliances, and general experience in the operation of a direct current station, are given. *Four hours, third term.*

SENIOR CLASS.

210. Theory of alternating currents: Lectures, recitations, and problems upon the phenomena of alternating current circuits, inductances, etc. This course is introductory to the subject of alternating current machinery, and in order to take it, students must have a fair working knowledge of differential and integral calculus and vector algebra. *Five hours, first term.*

211. Alternating current machinery: Lectures and recitations upon alternating current generators, various methods of calculating alternator regulation, parallel running, transformers, induction motors, single phase commutator motors, synchronous motors, rotaries, etc. The course is somewhat advanced and in order to take it satisfactorily, students must have a good knowledge of the mathematical theory of alternating currents. *Five hours, second term.*

212. Calculation of transmission lines: Lectures and recitations upon line inductance and capacity, ohmic and inductive drops, voltage regulation, stresses on conductors, tower construction, and related topics. *Five hours, third term.*

213. Laboratory work: Operation of alternating current machinery, determination of data for calculation of alternator regulation, direct determination of regulation, efficiency tests, transformer connections, transformer testing for efficiency and regulation, induction motor testing, circle diagram. Brake tests, single phase induction motors, synchronous motors, V-curves, rotaries, synchronizing, etc. The work during the third term consists chiefly in the determination of data for the student's thesis. *Four hours, entire session.*

214. Electric railway engineering: A detailed study of the subject of street and interurban electric railway service covering train resistance, grades, curves, line and track, car and power plant equipment, both direct and alternating currents, sub-stations, single phase equipment, and related topics.

The course consists of recitations and lectures with constant reference to current numbers of various technical journals. *Two hours per week, second and third terms of the senior year.*

215. Telephone engineering: History and development of telephone types, designs of telephone parts, sub-station equipment, magneto and common battery switch boards, exchange equipment, telephone power plants, over head and under ground circuits, protectors, coin collectors and meters, party lines, private branch exchanges, first and intercommunicating systems, trunking, and toll boards. *Two hours, second term.*

216. Telephone laboratory: Details of telephone construction, association of parts, assembly of switchboard parts, storage bat-

teries, tests for location of faults in cables and lines, capacity and insulation tests, details of common battery and magneto switch boards, trunking-schemes, etc. *Two hours, first and second terms.*

217. Electrical engineering: For senior mechanical engineering students. Direct current motors and generators, street railways, circuits, alternating currents, and alternating current machinery. This course is less detailed than the courses for electrical engineering students, but aims to cover the field in a more generalized manner. *Three hours, first term.*

218. Laboratory work: For seniors in mechanical engineering. This course is given in connection with course 217, and gives practice in the operation and testing of electrical machinery of various kinds. *Four hours, first term.*

219. Contracts and specifications: For seniors in the courses of electrical engineering and mechanical engineering. Lectures and recitations upon engineering specifications and the elements of the laws of contracts. Considerable time is devoted to exercises in writing specifications covering machinery and engineering projects. These specifications are read to the class and the students are required to offer criticism on each set. *Two hours, third term.*

MECHANICAL ENGINEERING

PROFESSOR WILMORE.

INSTRUCTOR STOKES.

INSTRUCTOR THOMAS.

INSTRUCTOR MITCHELL.

INSTRUCTOR HIXON.

ASSISTANT KEYES.

The following courses are offered in this department:

FRESHMAN CLASS.

301. Shop work—carpentry: The lessons include instruction in the nature and use of tools; instruction and practice in shop drawing; elementary work with the plane, saw, chisel; the construction of different kinds of joints, timber splices, cross joints, mortise and tenon, mitre and frame work, and dove tail work, comprising the different joints used in cabinet work, and examples of framing roof trusses. Students who have had previous experience in the use of tools or who show special proficiency, are given work of an advanced character. *Six hours, one term.*

302. Shop work—wood turning: The instruction includes the nature and use of the lathe and the tools, and the lessons comprise

Telephone Laboratory

Electrical Laboratory

plain, straight turning, caliper work to different diameter and lengths, simple and compound curves, screw plates and chuck work, hollow and spherical turning. *Six hours, one term.*

303. Shop work—pattern making: The course includes work in whole and split patterns in wood for solid and cored castings, and core boxes for producing the necessary cores. The characteristics of the different kinds of timber used for patterns are studied, and attention is called to allowances necessary for shrinkage and draft. The patterns are intended to be used by the students in their subsequent work in the foundry. *Six hours, one term.*

SOPHOMORE CLASS.

304. Shop work—forging: A text-book is used from which is learned something of the characteristics of the metals and the best methods of working them. The lessons are so arranged as to make the student familiar with the handling of the tools and the successive steps in working metals by hand. Exercises in drawing, upsetting and bending, cutting, punching, and welding by various methods, are given, together with a course in steel forging, including hardening, tempering, and case hardening. *Four hours, first term.*

305. Shop Work—foundry: Required of all students except those taking agriculture. The work for the most part consists of small articles, such as light machine parts and the stock pieces used for the exercise work in the machine shop. A sufficient variety is introduced for the student to acquire a good general knowledge of the usual methods and appliances used in light foundry work. Most of the work is in green sand in two part flasks, but some core work and more complicated work is introduced to illustrate the processes, as well as to furnish the castings for the advanced work in the machine shop. Instruction is given in operating the cupola, and from time to time lectures and recitations are held on the metallurgy and working of the metals used in the industrial arts. *Four hours, second and third terms.*

JUNIOR CLASS.

306. Elementary mechanics: Required of students in engineering courses. The fundamental laws of mechanical science are studied while special attention is given to the practical applications of these principles to engineering work. *Three hours, second term.*

307. Strength of materials: Required of students in the courses of mechanical engineering, electrical engineering, and mining engineering. The general properties and characteristics of cast iron, wrought iron, and steel are studied, and an elementary treatment of the strength of these materials in the forms of beams, girders,

columns, and shafts is given. The text-book work is supplemented by lectures and many practical problems are worked out. *Three hours, third term.*

308. Practical mechanics: Required of students who take machine shop work. The instruction consists of recitations and lectures on general machine shop work. The construction, use, and limitations of the various machine tools, the forms of cutting tools and methods of grinding them, and the form and use of jigs and gauges, are studied, together with instruction in machine management, and time and cost keeping. *One hour, entire session.*

309. Shop work: Required of students in the courses of mechanical engineering and electrical engineering. This work is divided into two parts:

(*a*) A course of chipping and filing. The lessons comprise work on cast iron and wrought iron, and consist in chipping to line on flat and curved surfaces, key seating, filing, and finishing to line, surface filing, slotting, pin and screw filing, and surface finishing with scraper.

(*b*) A course in machine work. The materials worked on include cast iron, wrought iron, steel and brass. Exercises are given in turning to various diameters and lengths, taper turning, facing with chuck and face plate, drilling in the lathe and drill press, reaming, boring, screw cutting in lathe and with taps and dies. Practice is given in working the planer, shaper, and milling machine. In the last part of the year, some work in tool making is given, such as making taps, reamers, and milling cutters. Some sort of construction or repair work for the department is always on the shop floor and students who are well advanced in their work have opportunity to gain additional practice and experience by assisting with this. *Six hours, entire session.*

310. Shop work: Required of students in the course of mining engineering and elective for juniors in the course of civil engineering. The work includes courses (*a*) and (*b*) as described in course 309 just preceding, except the amount of work required is less in proportion to the time consumed.

All shop work is done from blue prints and blackboard sketches. For the preliminary exercise work, special instruction sheets are prepared and given out to each student with the stock for the exercises. These sheets explain in detail each step in the process of producing the exercise, and are intended to supplement the individual instruction of the instructor. In the construction work it is the purpose to select some simple machine and build two or more of them on the interchangeable system. Jigs and templates are built to accomplish this result as far as possible. A system of time keeping is in force in the shop. At the end of the week each student makes out his time card, describing the work he has done during the week, and giving the number of hours spent on each job. *Four hours, entire session.*

SENIOR CLASS.

311. Power plant engineering: Required of students in the courses of mechanical engineering and electrical engineering. The work of the course consists of a study of the practical applications of steam machinery. It is believed that a thorough knowledge of the apparatus in actual practical use is the best preparation a student can have for the study of the theory, and to that end, the different types of engines, boilers, pumps, condensers, and other auxiliary apparatus are taken up and studied in detail, and the advantages of each are discussed. Extensive files of manufacturers' catalogues are kept, and the technical papers and magazines in the library are freely used in order to keep in touch with the latest and best practice in engineering work. *Five hours, first term.*

312. Thermodynamics: Required of students in the courses of mechanical engineering and electrical engineering. The subject is first studied from the ideal standpoint, and later the applications are made to hot air engines, gas and gasoline engines, and steam engines, and also to air compressors and refrigerating machines. The temperature-entropy method of analysis is used in explaining heat transfers, and in general, graphical methods are used in preference to analytical ones when they can be made to serve the purpose equally well. In this course will be given instruction in indicator practice and the interpretation and working up of indicator diagrams from steam engines, gas engines, air compressors, and refrigerating machines. *Five hours, second and third terms.*

313. Heating and ventilating: The different methods of heating and ventilating buildings are treated. A study is made of the relative efficiency of hot water, steam, and warm air as mediums for heating different kinds of buildings, and special attention is given to the design and operations of healthful heating systems for residences. *Two hours, first term.*

314. Gas engines: This is a descriptive course, and gives attention to the construction and operations of gas engines and gas producers as used in modern power plants. The rapid development of the gas engine in recent years warrants a more extended treatment of this subject than can be given in the usual course of thermodynamics, and the above is offered as supplementary thereto. The subject will be presented by text-book, lectures, manufacturers' catalogues and drawings, and student reports on current articles of interest. *Two hours, second term.*

315. Mechanics of materials: The properties and characteristics of the materials of engineering construction are studied, and the development of the methods of calculating their strength under different conditions of stress is explained. Many problems involving the strength of beams, girders, columns, and shafts are worked out. *Three hours, first term.*

316. Materials of machines: Attention is given to the methods of manufacture and the uses of the materials which are employed in engineering construction. Special attention is given to the latest methods of manufacture of iron, steel, and cement, the work being presented by text-book, lecture, lantern slides and manufacturers' catalogues. *Three hours, third term.*

LABORATORIES.

JUNIOR CLASS.

317. Summer course: Required of juniors in the courses of mechanical engineering and electrical engineering. The work will consist in the adjustment and calibration of instruments used in engineering work, and the adjustment and operation of gas, gasoline, and steam engines. Tests will be made to determine the efficiency of mechanisms such as hoists, jack screws, gearing, belts, and other transmission devices, together with some work in valve setting and power measurement of steam engine. Complete and accurate written reports of each experiment are required. *Twenty hours per week for two weeks, beginning the week following commencement.*

SENIOR CLASS.

318. Laboratory: Required of students in mechanical engineering and electrical engineering. This work includes fuel analysis and heat determination, flue gas analysis and study of combustion, oil and lubricant testing, and valve setting and indicator card analysis. *Four hours, first term.*

319. Laboratory: Required of students in mechanical engineering and civil engineering and optional in electrical engineering. The course includes work in testing the strength of materials, as iron, steel, wood, and cement in tension, compression, and transverse loading, and the calibration of weirs, nozzles and meters, a study of the flow of water in pipes, and the testing of hydraulic motors and pumps. *Four hours, second term.*

320. Laboratory: Required of students in mechanical engineering and electrical engineering. The work includes tests of engines, boilers, pumps, gas and gasoline engines, complete power plants, and when opportunity offers, tests of commercial power plants. *Four hours, third term.*

GRADUATE STUDENTS.

321. Laboratory: This work is arranged to suit the work being carried by the students, and the hours are adjusted to suit their available time.

322. Steam turbines: The theory, design and structural details of the different types of modern steam turbines are studied, and complete designs are worked out. *Three hours, first term.*

323. Reinforced concrete construction: A study is made of the principles involved in reinforced concrete construction as applied to buildings in general, and particularly to buildings for power houses, shops, manufacturing buildings, and large bins for storing coal. *Three hours, second term.*

324. Power plant design and economics: The economics of power plant design, the relation of the different elements of a power plant to each other, and the conditions of maximum efficiency are studied. Plants are designed to give highest efficiency under specified conditions, and actual plants are studied to discover, if possible, sources of additional economy in operation. *Three hours, third term.*

325. Thesis: Every applicant for a degree is required to prepare a thesis and hand it in not later than May 1st, preceding the commencement at which he expects to graduate. This thesis may consist of a design, a study of some engineering problem involving a series of tests, or a study involving the collection and analysis of data and material on some engineering subject, with a statement of definite conclusions derived therefrom.

326. Manual training for teachers: Courses in elementary wood work and iron work are offered. These courses will be adapted as far as possible to the individual needs of those taking the courses, and in addition to the shop work will include lectures and conferences on the organization of courses and the equipment of shops for manual training. *Hours to be arranged.*

SPECIAL STUDENTS.

Special students who have the necessary preparation may be admitted to any of the classes in this department. For the benefit of students who, for any reason, are not able to remain in college to complete the full course, but who wish some training in drawing and shop practice, a special two-year course has been arranged. This course is particularly recommended to the young men who contemplate entering the mechanical trades, either preceding or following the apprenticeship period. In many cases this work has been accepted as equivalent to a part of the apprenticeship period and the time of the latter shortened thereby. The drawing and mathematics are invaluable tools in any of the trades, and work in the different shops enables the apprentice to become familiar with the principles of the trades allied to his own.

For teachers who desire to secure preparation in the subjects pertaining to manual training, special shop courses are arranged. These will include such of the regular courses as are adapted to the requirements of the class, and suitable supplementary courses in wood and metal work. Lectures on the arrangement of courses and the equipment of shops for instruction in manual training are offered.

MINING ENGINEERING AND GEOLOGY

PROFESSOR BROWN.

ASSISTANT GLOVER.

JUNIOR CLASS.

401. Crystallography: For students in the courses in civil engineering, mining engineering, and chemistry and metallurgy. A thorough study is made of the crystal systems with the aid of a full set of crystal models and natural crystals. Special emphasis is laid upon the more practical features which will be of service in further mineralogical work. *Four hours, first mid-term.*

Text-book: Moses and Parsons' Mineralogy.

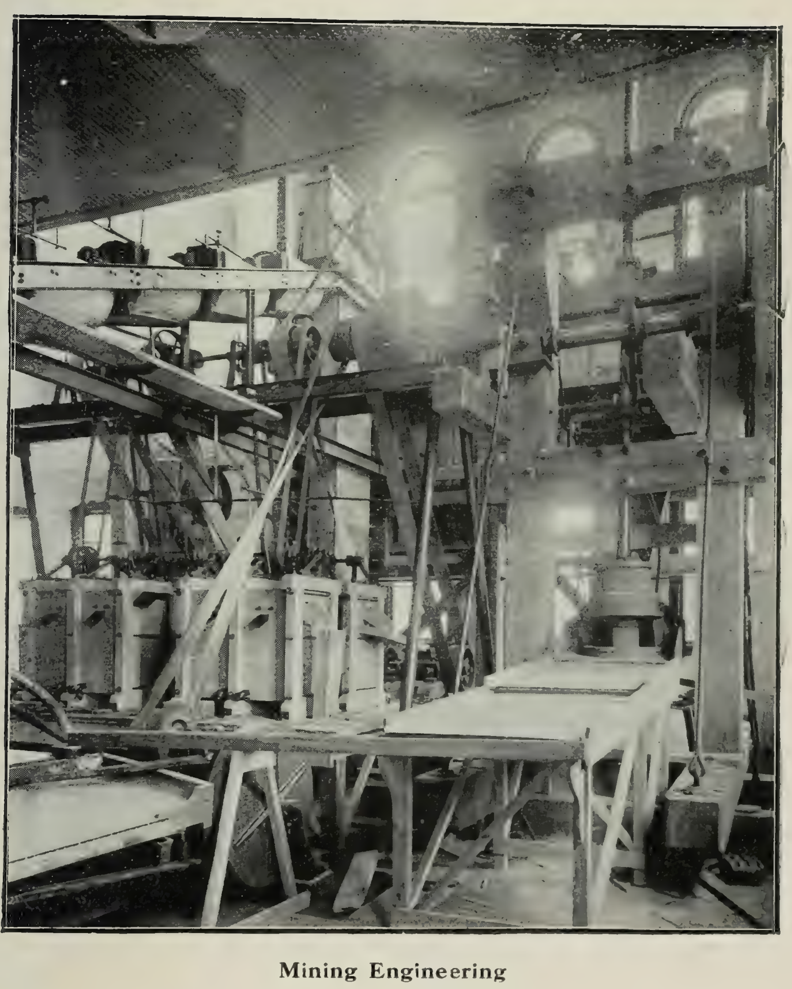
402. Mineralogy: For students in the courses of civil engineering, mining engineering, and chemistry and metallurgy. Half of the time is devoted to blow-piping and the determination of a large number of unknown minerals. The second half of the course is given to a study of the physical characteristics of the minerals. A good type collection of minerals is kept in the laboratory for comparison. An effort is made to have the student become familiar with economically important ores and non-metallic minerals and the common rock forming minerals so that he can identify them at sight by the application of a few simple tests. *Four hours, two and a half terms.*

Text-books: Butler's Handbook of Blow-pipe Analysis, and Butler's Handbook of Minerals.

403. General geology: For students in the courses of mining engineering, and chemistry and metallurgy, and for seniors in the courses of civil engineering, general course, and agriculture. The course covers dynamic geology, structural geology, geomorphology, and historical geology in the order named. The lectures and recitations are supplemented by laboratory instruction and geological excursions. *Two hours, entire session.*

Text-book: Chamberlin and Salisbury's College Geology.

404. Mine surveying: All general surveying as given by the



Mining Engineering
Ore Dressing Laboratory

civil engineering department previous to the second term of the junior year is required for this course. The work covers general surveying methods as applied to conditions prevailing at mining properties, both underground and at the surface. The student is required to work out practical problems that he will be likely to meet in actual practice. *Five hours, first half of second term.*

Text-books: Henck's Field Book, Coal and Metal Miner's Pocket Book, International Text-Books.

405. Coal mining: For those who have taken course 404 and its prerequisites. This course includes examination of coal properties, coal cutting machinery, methods of coal mining, track work, coal washing, coking and ventilation. *Five hours, second mid-term, and third term.*

Text-books: Coal and Metal Miner's Pocket Book, and International Text-Books.

406. Drafting: The course includes free hand lettering, mapping, and detailed drawings to scale of various structures relating to mining. *Five hours, entire session.*

407. Summer course: The time will be divided between a study of gold mining and milling at Alexander City; coal mining, washing, and coking at Birmingham, and iron ore mining at Birmingham. Surveys and reports will be required. *Four weeks immediately following commencement between the junior and senior years.*

SENIOR CLASS.

408. Economic geology, non-metallic minerals: For students in the courses in mining engineering, and chemistry and metallurgy. The course is presented by lectures and recitations and includes the study of modes of occurrence, distribution, origin and uses of coal, petroleum, limestones, salines, gypsums, fertilizers, abrasives, minor non-metallic minerals, and mineral waters. *Two hours, first term.*

Text-book: Riess' Economic Geology of the United States. (Revised.)

409. Economic geology, metallic minerals: For students who have taken course 408. The work includes a study of the ores of iron, copper, lead, zinc, gold, silver, silver-lead, aluminum, manganese, mercury, and the minor metals. *Two hours, third term.*

Text-book: Riess' Economic Geology of the United States. (Revised.)

410. Mining: Modes of occurrence and origin of the various ores and economically valuable mineral deposits. Prospecting and examination of mineral properties, including boring by different methods. Methods of opening up mineral deposits, break-

ing ground, supporting excavations, developing and working coal and metalliferous deposits, haulage, hoisting, drainage, ventilation, lighting and provisions for ascent and descent. The last term is devoted to the economics of mining. This subject covers mining methods, finance, ore reserves, valuation of mining property, and other subjects relating to the practical operation of mines. *Three hours, entire session.*

411. Drafting: Drawings of mining and metallurgical machines are made from actual measurements taken. Also original work in connection with thesis. *Four hours, entire session.*

412. Laboratory course: For students in mining engineering and chemistry and metallurgy. The work includes crushing, sampling, concentration, stampmilling, amalgamation, and cyaniding. *Three hours, entire session.*

Text-books: Coal and Metal Miner's Pocket Book, and International Text-Books.

413. Methods of teaching physical geography: Especially adapted to the secondary schools of the State. In the course in general geology will be found much that is especially applicable to physical geography. It takes up a study of subterranean and surface agencies both as to their destructive and constructive processes. The results of these processes are then taken up in a study of the topography of the surface of the earth under the following heads: The geographic cycle; land sculpture; topography as determined by faults and joints; adjustment of rivers; seacoasts; mountain ranges. Students desiring extra work in this subject may arrange for a three-hour course. *Two hours a week, first and second terms.*

GRADUATE STUDENTS.

414. Graduate course: This course is offered to those who desire to pursue the subjects related to mining beyond the scope to which the two years' course limits them. The work will be arranged to meet the requirements of those desiring to take it.

ARCHITECTURE

PROFESSOR CURTIS.

ASSISTANT WARD.

The trustees of the Alabama Polytechnic Institute established in June, 1907, a department of architecture, to comply with an increasing demand for instruction in this subject, and to encourage students to take up a profession which hitherto could be pursued only after an expensive term of study in the North.

The course as planned leading to the degree of B. S. in Architecture covers a period of four years' study, of which the first two are devoted chiefly to intentional preparation in technical and cultural subjects leading up to the special instruction in architecture beginning in the junior year. The curriculum planned for the junior and senior years recognizes that architecture must be treated as an art as well as a science, and as drawing and design are the most essential elements in an architect's professional work, the greatest possible amount of time is devoted to them. As arranged the afternoons of the week are devoted entirely to drawing, and the mornings to lectures on the technical studies. The work of the architect on account of its many aspects requires not only a thorough knowledge of design and building processes, but a wide sympathy with all intellectual culture, and the student is encouraged throughout his course to improve his mind by reading literature, history, and science. The importance of descriptive geometry and its applications is emphasized by a very thorough course in the sophomore year, and this is continued during the fall term of the junior year in its special applications to architectural design and rendering.

Architectural Association Medal.—Given annually by the Society of Architects in Alabama to the student of the senior class in architecture most proficient in design.

The following courses are offered:

SOPHOMORE CLASS.

501. Elements of architecture and drawing: For sophomores who expect to elect the course in architecture. Thorough training is given in the fundamental principles of the architectural system of drawing. This includes free hand and mechanical in the various mediums, and a careful study of lettering. The orders rendered in the form of simple compositions and frontispieces furnish the basis of the year's work. An effort is made to cultivate the student's sense of proportion by insisting on an accurate knowledge of all the details of the classic orders as classified in Ware's American Vignola. *Three hours, entire session.*

JUNIOR CLASS.

502. Theory of architecture: Lectures and criticisms over the drawing board. General theory of artistic composition in the various styles applied to architecture and ornament. The course includes an extended study of the elements of design such as vaults, arches, arcades, columns, wall treatment, stairways, etc.; principles of rendering in color, pen and ink, and pencil, planning and composition of facades and a critical survey of the monuments of architecture in all periods. *One hour, entire session.*

503. History and ornament: The recitation periods are occupied by lectures on the historic styles and monuments of architecture and their applications to modern design, supplemented by the exhibition of lantern slides, and reference to photographs and books. The student is required to consult selected articles in the library and to prepare independently several essays during each term on specified subjects, illustrated by sketches and tracings. These are subsequently discussed and criticised. Such personal investigations are continued into the senior year, and the student gradually becomes familiar with standard books and acquires a working knowledge of historic forms.

The course includes lectures on prehistoric architecture, general topography, history and religion of Egypt, pyramids, tombs, and temples; architecture and ornament of the Assyrians, Chaldeans, Persians, Phoenicians, and Jews; prehistoric Greek architecture, mythology, and racial characteristics; origin of the orders, vases, sculpture, polychromy, optical refinements; the Acropolis at Athens, and the Parthenon; early history of Italy and the Etruscans; the Romans,—types of buildings and construction and comparison of Greek and Roman art; early Christian and Byzantine art; Saracenic architecture and ornament; the Romanesque and Gothic styles; the Renaissance, Germany, and Spain; modern architecture on the continent and in the new world, and the various revivals; colonial architecture in the United States. *Two hours, entire session.*

503 (a). Ornament: Lectures on the various styles of ornament illustrated by means of photographs, prints and blackboard sketches in colored chalk are given concurrently with the course in the history of architecture. Numerous tracings and color sketches are required. *One hour, entire session.*

504. Drawing and design: The study of design is pursued by means of assigned problems and individual and class criticism. The first term is devoted mainly to a study of the orders on a large and small scale by means of carefully composed frontispieces, and during the spring, problems are assigned which will enable the student to employ the orders in a monumental and scholarly manner. A consistent and faithful adherence to historic precedent is insisted upon. *Eight hours, entire session.*

504 (a). Freehand drawing: Pencil drawing from the cast, pen and ink tracings from photographs and sketches in black and white. Students from other departments of the college are admitted to this course by special arrangement. *Two hours, entire session.*

505. Architectural graphics: This course embraces the theory of projections, intersections, and shades and shadows; perspective by the office method and isometric constructions to simplify com-

plex perspective details. It furnishes the basis for architectural drawing, and an equivalent of the course in descriptive geometry given in the sophomore year (Engineering 602) is an essential pre-requisite. *Three hours, entire session.*

505*a*. Stereotomy: Description of building stones, tools, finishing and specifications. Methods of cutting stones, etc. Problems in stone jointing, and pattern making of developable surfaces. Lectures and drawing. Required of students in architectural engineering. *Two hours, fall term.*

Summer work: *Twenty-five sketches or four weeks in an architect's office.*

SENIOR CLASS.

506. Drawing and design: The course is conducted by means of sketch problems occupying eight hours, testing the student's originality and use of the classified knowledge at his command; by written programs for typical buildings and group plans in the presentation of which a month or more would be allowed; by a thesis design occupying two months of careful work, with a written memoir accompanying the same. A lecture is given once a week on composition and the theory of architecture. *Twelve hours, entire session.*

506*a*. Freehand drawing: Charcoal drawing from the cast; water color. Students in other departments are admitted to this course by special arrangement. Pre-requisite 504 (a), Freehand drawing. *Two hours, entire session.*

507. Architectural engineering: The courses in architectural engineering and specification of building materials take up a major part of the last year's work. In addition to the lecture and text-book recitations, practical examples are demonstrated and problems worked out over the drawing board. Working drawings and details of completed buildings are carefully studied, and scale drawings made by the student on tracing cloth and blue-printed. The student is instructed in the use of the various steel manufacturers' hand books and other pocket books.

Every other week a day is given to the solution of problems in constructive design, graphical analysis, etc., to illustrate the principles considered. Specifications are discussed and the different materials of construction, their manufacture and uses by the trades are described.

The following synopsis indicates the subjects considered in detail: In construction, foundations, masonry walls and footings, stability and supporting forces, etc. Dimensions and properties of structural shapes, tension, shearing, riveted joints, strength of posts, struts, and columns in wood, cast iron, and steel, strength of beams, stiffness and deflection, built up sections, fireproofing of buildings, reinforced concrete, roof trusses in wood and steel, graphical analysis of same and detail of joints, estimating. *Three hours, entire session.*

507-a. Structural drawing and design. This course is intended for students who desire to specialize in the engineering or constructive side of architecture rather than in the art of planning and composition of facades. The two classes are required to work in the same draughting room, in order to secure the mutual advantages of observation and criticism of each other's work. Various details of construction are carefully worked out, drawn, traced and blue-printed.

508. Specifications and building materials: This course includes architectural practice comprising the preparation of working drawings, specifications and superintendence. Legal relations of architect, owner, and contractor, contracts, settlement of disputes, responsibility and supervision of architect, payments, etc. Specific clauses and specification of labor, materials, workmanship, and construction. Mason's work, foundations, shoring and underpinning, limes, cements and mortars, building stones, brickwork, terra cotta, materials of fireproofing, lathing and plastering. Carpenter's work, building and finishing woods, framing, windows and doors, outside finish, standing finish, floors, stairs, heavy framing and slow burning construction, plumbing, heating and ventilating, builder's hardware and patented devices.

The course in specifications and building materials alternates with French. Juniors and seniors take these courses together every alternate year.

509. Construction and design: Students who have completed the foregoing prescribed studies leading to the degree in architecture, may pursue the study of design and construction through another year. A series of lectures is given, occupying a period of one hour a week throughout the year, the object of which is to improve the student's critical judgment and give him a more complete survey of the field of architectural composition. Certain reference readings are specified and he is required to report the results of his research. At least ten hours a week of freehand and architectural drawing are further required.

Text-book: J. Guadet—"Elements et Theorie de l'Architecture."

510. Six non-technical lectures on the history and appreciation of architecture, illustrated with lantern slides, are given at stated intervals throughout the year. This course is not restricted to students in architecture, but auditors are required to register their names at the beginning of the year. Not counted toward a degree.

SPECIAL STUDENTS.

Applicants for admission as special students in architecture must show by certificate from a recognized college or by examination in mathematics, English, and history that their preparation is equal to that given in those subjects during the freshman and sophomore years in this institution. They will also be required to take descriptive geometry in addition to their course in architecture. Draughtsmen of two years' experience in an architect's office will also be admitted as special students, provided their general education is satisfactory.

TEXT-BOOKS.

Sophomore Class.—Ware's American Vignola. Parts 1 and 2.

Junior Class.—History of Architectural Development—Simpson. Part I. History of Architecture—Hamlin. A Discussion of Composition—Van Pelt. Graphics—Curtis.

Senior Class.—Building Construction and Superintendence. Kidder, Parts 1 and 2. Architects and Builder's Handbook—Kidder.

MECHANICAL DRAWING AND MACHINE DESIGN

PROFESSOR FULLAN.

INSTRUCTOR GAUM.

INSTRUCTOR THOMAS.

ASSISTANT HUGHES.

The following courses are offered in this department:

FRESHMAN CLASS.

601. Mechanical drawing: This course is not of a technical nature, is intended to be of general educational value to the student, and is required of students in all courses. The object of the course is to provide the student with the applications of geometry to drawing, and to train the hand and eye, with the mind. The work is principally that of linear drawing, including the most useful of the geometric constructions, arranged in progressive order. Free-hand lettering is given early in the course by means of lectures, and practice work in it is continued throughout the year. The one plane projections—axonometric and oblique—which enable the student to represent an object on a single plane, are illustrated

by means of suitable models, from which the students make their drawings. In this course accuracy, neatness, and the use and care of the instruments are given special attention. *Three hours, entire session.*

SOPHOMORE CLASS.

602. Descriptive geometry: Required of all students preparing for engineering and architectural courses. The work is given by lectures, written recitations, and drafting room instruction. In this course, theory and practice are combined with the purpose of training the student in the graphical expression of ideas. The instruction includes problems relating to the points, straight line, and plane; to tangents and normals; to cylindrical, conical, and warped surfaces; to sections, intersections, and developments; to shades, shadows, and perspective, and is intended to develop in the mind of the student a clear concept of magnitudes in space. The lectures and written recitations are to impart principles and to permit the instructor to meet the entire class, and, with diagrams and models, supplement the work of the text. The drawing, two hours per week, consists of plates of problems, which are selected from the text-book and other sources. *Four hours, entire session.*

603. Mechanical drawing: Like course 601, of the freshman class, this course is non-technical and is of a general educational nature. The work is given concurrently with that of course 602, in descriptive geometry, and the applications of the methods of analysis given in descriptive geometry are stressed in each case where they may be applied. The subjects of the drawing plates, which are principally geometric, are required to be completely represented by the student, to enable one to read clearly what is intended to be shown. The work includes orthographic projection, sections, intersections, and developments, machine drawing, and free-hand lettering. As a check on the work in sections, intersections, and developments, and to more fully illustrate the subject, models from drawing paper of the surfaces are made by the student from the developments. This course is a prerequisite to work in the junior class in civil, electrical, mechanical, and mining engineering. *Three hours, entire session.*

JUNIOR CLASS.

604. Kinematics of machinery: Required in the courses of mechanical engineering and electrical engineering. Under this head machines are analyzed and their elementary combinations of mechanism are studied. The communication of motion by gear wheels, belts, cams, screws, and link work, and the different ways of obtaining definite velocity ratios, and definite changes of velocity

in machine parts, parallel motions, and quick return motions, as well as the designing of trains of mechanisms for various purposes, together with the theoretical forms of teeth for gear wheels to transmit motion of these trains, are investigated under this subject. *Three hours, entire session*

605. Graphic statics of mechanism: Required in course of mechanical engineering. The lectures provide a brief course in graphic statics, graphical statics of mechanism, and in the design of structures, including roof trusses for factory buildings, crane frames and girders, and watertank towers. The stresses in machines and structures are investigated by graphical methods, which are carefully checked in the beginning, by analytical proofs. This course includes the solution by graphical methods of such problems, before which analytical methods are comparatively impotent, as those which involve the friction losses in machines, and of the determination of the efficiency of mechanisms. The graphical method is also applied to dynamics by problems in the balancing of engine crankshafts working under specified conditions. The use of manufacturers' handbooks and drafting room practice are given special attention. *One hour, entire session.*

606. Machine design: Required in the courses of electrical engineering and mechanical engineering. Instruction is given in the design of fastenings and machine parts, and in the general methods of arranging views. This course includes the design of cams, gear tooth outlines, quick return motions, and link work combinations, which supplements course 604, in kinematics. Scale drawings of simple machines are made from dimensioned sketches, which each student makes for himself from an actual machine or model. Tracings and blue-prints are made from these drawings. All the instruction is intended to familiarize the students with modern drafting room methods. *Four hours, entire session.*

SENIOR CLASS.

607. Machine design—lectures: Required in the courses of mechanical engineering and electrical engineering. These lectures are intended to cover the general instructions to the students, such as the selection of materials for different machine parts, the rules for proportion of parts to secure strength, symmetry, and cheapness of manufacture, and the best methods of making, recording and preserving the calculations incidental to the design of a complete machine. Much valuable engineering data of current nature in the form of notes are given as a supplement to the text-book. Illustrated lantern lectures on subjects related to the course are given at intervals during the year. *One hour, entire session.*

608. Machine design—drawing: Required in the course in

mechanical engineering. This is a continuation of the junior course in machine design. Original problems involving the design of complete machines to work under specified conditions are assigned and the student develops the idea in the form of sketches. These are submitted to the instructor for criticism and are afterwards embodied in complete detail and assembly drawings. The calculations of each design are written up neatly and filed with the drawings. Special attention is given to the strength of the parts, to the harmonious and symmetrical appearance of the complete machine, and to the details as regards practical manufacture. *Six hours, entire session.*

609. Machine design—drawing: Required in the course in electrical engineering. The work given and the methods pursued are similar to those described in course 608, just preceding, but the amount of work required is reduced in proportion to the amount of time given to the subject. *Three hours, entire session.*

GRADUATE STUDENTS.

610. The work offered during the post-graduate year is an extension of that of the senior year. More of the theory of the subject is taught, more intricate machines are involved, and problems are given involving the design of a series of machines for manufacturing some specific article. The problems arising in the design of a line of machines of different sizes are also taken up, including the applications of graphical methods and the use of factors of enlargement and reduction. Special attention is given to the effect of current practice on the proportion of machine parts. Suitable text and reference books are used.

611. Methods of teaching drawing and descriptive geometry: A course in the methods of teaching drawing and descriptive geometry is given to those who wish to prepare for teaching these branches. This course includes advanced work in shape of problems, supplemented by frequent conferences with the instructor, a full bibliography of works on the subjects, and an extended course in reading.

Those who desire to avail themselves of an opportunity to practice the teaching of the subjects, may be permitted to attend the meetings of the large classes in elementary work for the purpose of observing methods of teaching.

Those who show sufficient preparation may be allowed to assist in tutoring delinquent students and those who enter conditioned.

Special attention is given to the subject of drawing as taught in high school work.

TEXT-BOOKS.

Thompson's Educational and Industrial Drawing Series, Kenison's Mechanical Drawing, Cross' Mechanical Drawing, Phillips and Millar's Essentials of Descriptive Geometry, Anthony's Machine Drawing, James' Mechanical Drawing, Schwamb and Merrill's Elements of Mechanism, Keown's Notes on Mechanism, Spooner's Machine Design, Smith and Marx's Machine Design, Mack's Notes on Machine Design, Spangler's Graphics.

COLLEGE OF AGRICULTURAL SCIENCES

DEPARTMENTS.

The College of Agricultural Sciences comprises the following departments:

Chemistry.
Agriculture.
Botany.
Pharmacy.
Horticulture and Forestry.
Entomology.
Animal Industry.

The facilities for instruction together with laboratory equipment in each department are described under the head of "Laboratories and Facilities for Instruction" pages 9 to 20 of the catalogue.

In addition, students in the different departments of the College of Agricultural Sciences receive instruction in other departments as follows:

English.
History and Latin.
Modern Languages.
Mathematics.
Mechanic Arts.
Surveying.
Physics.
Geology and Mining Engineering.
Mechanical Drawing and Machine Design.
Military Science and Tactics.
Veterinary Science.

Interior Chemical Laboratory

CHEMISTRY

PROFESSOR ROSS.

PROFESSOR HARE.
ASSISTANT PROFESSOR BRAGG.
ASSISTANT PROFESSOR WILLIAMSON.
ASSISTANT POWELL.

Instruction in this department embraces the following courses of lectures; systematic laboratory work is given in connection with each course for the practice of chemical analysis and chemical research:

SOPHOMORE CLASS.

101. Course in general chemistry: This consists of a series of lectures including a discussion of the fundamental principles of chemical philosophy in connection with the history, preparation, properties, and compounds of the metallic and non-metallic elements, with the main facts and principles of organic chemistry. In this course the more common applications of chemistry to the arts and manufactures are discussed. The apparatus used for experimental illustration is extensive, containing the newest and approved improvements necessary for presenting the subject in the most attractive and instructive form. *Four hours, entire session.*

REFERENCE BOOKS.

Remsen's College Chemistry, Newth, Holleman, Roscoe and Schorlemmer, Chemical Journals.

JUNIOR CLASS.

102. Industrial chemistry: Lectures, including discussion in detail of the process and chemical principles involved in the most important applications of chemistry in the arts and manufactures to the preparation of materials for food and drink, for clothing, shelter, illumination, cleansing, purifying, writing, printing, etc.

These lectures are amply illustrated by means of suitable specimens of raw materials and manufactured products, together with models and diagrams. *Four hours, entire session.*

103. (a) Course in organic chemistry: Instruction in this subject embraces lectures and recitations upon the leading facts and principles of the chemistry of the carbon compounds, and includes a study of the methods of preparation of the more important com-

pounds, their properties, and their structural and stereo-chemical relations. *Two hours, entire session.*

(b) A special short course offered to students in the agricultural courses. *Two hours, first term.*

TEXT AND REFERENCE BOOKS.

Remsen's Organic Chemistry, Richter's Organic Chemistry, Gatterman's Practical Methods of Organic Chemistry.

SENIOR CLASS.

104. Course in metallurgy: This consists of lectures and recitations upon the more important metals, such as iron and steel, copper, lead, tin, silver, gold, mercury, zinc, etc. It includes a discussion of the physical and chemical properties of the metals and their alloys, the ores and their treatment, and the processes by which the metals are obtained from the ores, with chemical reactions involved. *Two hours, entire session.*

105. Course in agricultural chemistry: This consists of lectures on chemistry in its application to agriculture, and includes a thorough discussion of the origin, composition, and classificaton of soils, the composition and growth of plants, the sources of plant food and how obtained, the improvement of soils, the manufacture and use of fertilizers, the chemical principles involved in the rotation of crops, the feeding of live stock, and the various operations carried on by the intelligent and successful agriculturist. *Three hours, second and third terms.*

REFERENCE BOOKS.

Snyder's Soils and Fertilizers, Snyder's Chemistry of Plant and Animal Life, Johnson's How Crops Grow, and How Crops Feed, Lupton's Elementary Principles of Scientific Agriculture, Johnson and Cameron's Elements of Agricultural Chemistry, Storer's Agriculture in Relation to Chemistry, scientific journals, reports of the United States Department of Agriculture, and the bulletins and reports of the various home and foreign agricultural departments and stations.

106. Engineering chemistry: A course of lectures given during the senior year, especial attention being devoted to the study of the construction and equipment of the chemical plants devoted to the manufacture of the more important chemical products. The study of textile chemistry will also be included in this series of lectures. *One hour, entire session.*

Excursions to various chemical and metallurgical plants during the course of the year will aid in familiarizing the student with the practical details of the operation of the leading industries.

REFERENCE BOOKS.

Thorp's Industrial Chemistry, Wagner's Chemical Technology; Muspratt's Chemistry as applied to Arts and Manufacturing, Ure's Dictionary, Watt's Dictionary, Sadtler's Industrial Organic Chemistry, Blount and Bloxam's Chemistry for Engineers and Manufacturers.

107. Course in theoretical chemistry: The more modern phases of chemical theory are given special attention. *Two hours, entire session.*

108. Course in physical chemistry: Lectures and recitations. *Two hours, entire session.*

109. Methods of teaching chemistry in the secondary schools: In this course, students who have had the necessary preliminary work in chemistry will be afforded the opportunity of taking laboratory practice in experimental chemistry for lecture purposes and for the purpose of the practical study of methods of handling classes in experimental laboratory work. Advanced students can also take the course in the history of chemistry which is provided in the senior year of the course in chemistry and metallurgy. *Hours to be arranged.*

LABORATORIES.

110. Course of systematic laboratory work: Courses of practical work in the laboratory are carried on in connection with all courses of lectures.

The laboratories, which are open from 9 A. M. to 5. P. M. during six days in the week, are amply supplied with everything necessary for instruction in chemical manipulation in qualitative and quantitative analysis, and in the methods of prosecuting chemical research. Unusual facilities are offered to students who wish to devote their time to the special study of practical chemistry.

Each student on entering the chemical laboratory is furnished with a work table, a set of re-agent bottles and the common re-agents and apparatus used in qualitative and quantitative analysis.

At the close of the session he will be credited with such articles as may be returned in good order; the value of those which have been injured or destroyed will be deducted from his contingent fee.

SOPHOMORE CLASS.

(a) All students in the course in agriculture are required to take practical laboratory work. Students in the courses in chemistry and metallurgy and in pharmacy, upon application, may be allowed to take this work. *Six hours, entire session.*

JUNIOR CLASS.

(b) The work of this course embraces the practical operations of chemical synthesis and analysis, and includes the preparation of non-metallic elements and their most important compounds, in addition to a systematic study of the metals and their compounds, their separation and identification.

SENIOR CLASS.

(c) A course in quantitative analysis, including analysis of fertilizers, soils, coals, ores, iron and steel, sugars and sugar products, feed stuffs, mineral waters, fluxes, slags, cinders, furnace gases, etc. The nature of the work is varied somewhat to suit the individual object of the student.

(d) The laboratory course provided for students in the course in mining engineering includes work in qualitative analysis during the first term. During the second and third terms, students take work in quantitative analysis, including assaying. In this latter portion of the course, especial attention is given to metallurgical analysis and the fire assay of ores of gold, silver, and other important metals. *Eight hours, entire session.*

(e) In the course of pharmacy instruction in toxicology and toxical analysis is given during the last term.

111. In addition to the laboratory work above described it is designed to give a short course of laboratory work in industrial chemistry, in which the student will apply upon a small scale the principles involved in the processes of some of the more important chemical industries.

Advanced students are afforded ample facilities for work in organic preparations and organic analysis.

TEXT-BOOKS.

In qualitative analysis—Jones, Sellers, Fresenius, Plattner.

In quantitative analysis—Fresenius, Cairns, Sutton, Rose, Blair's Analysis of Iron and Steel, Rickett's Notes on Assaying, Mitchell's Manual of Practical Assaying, Stillman's Engineering Chemistry, Lord's Metallurgical Analysis.

In agricultural chemical analysis—Official methods of the Association of Agricultural Chemists, Wiley's Principles and Practice of Agricultural Analysis.

Comer Agricultural Hall

AGRICULTURE

PROFESSOR DUGGAR.

INSTRUCTOR FUNCHESS.

ASSISTANT WILLIAMSON.

The regular agricultural course extends through four years and is intended to prepare those who complete it to become successful farmers, farm superintendents, and agricultural scientists in the various divisions of agricultural work in the U. S. Department of Agriculture and the numerous agricultural colleges and experiment stations. The studies in the regular agricultural course are so arranged that a student may obtain a thorough education while acquiring the technical training necessary to the most successful management of farming operations and of agricultural investigation or teaching. No foreign language is required for graduation in this course, but those who expect to engage in the scientific work of the U. S. Department of Agriculture or of the Agricultural colleges and experiment stations, have the opportunity to study Latin, French, and German, or any one or two of these.

For the benefit of those who are unable to spend four years at college and who desire to prepare for the management of a farm, a short or two-year course in agriculture is provided. In this the student devotes his entire time to those studies having a direct bearing on his future occupation.

The following courses of instruction are offered:

FRESHMAN CLASS.

201. Introduction to agriculture: This is a short course of lectures, dealing with some of the simplest phases of agriculture. *Two hours, half third term.*

SOPHOMORE CLASS.

202. Principles of agriculture: Lectures, recitations, and laboratory practice dealing with the soil and the conditions necessary to the growth of crop plants. Methods of preparing and cultivating the soil are considered. *Four hours, second term.*

203. The small grains: Lectures, recitations, and field practice on wheat, oats, rye, and barley. These plants are treated both as grain crops and as forage plants. *Two hours lectures, two hours laboratory, third term.*

JUNIOR CLASS.

204. Corn: Lectures, recitations, and field practice on the cultivation, judging, and improvement of corn. The student assists in harvesting certain experiments, becomes acquainted with a number

of the best varieties, learns to select the best ears and the best plants, and notes the results of experiments in improving or breeding corn. *Two hours lectures, two hours laboratory, first term.*

205. Leguminous forage plants and soil improvement: Lectures, recitations, and field practice on this most important group of forage plants, including cowpeas, soy-beans, alfalfa, the clovers, vetches, etc. These plants are treated both with reference to their use as forage plants and as means of improving the soil. *Two hours lectures, two hours laboratory, third term.*

SENIOR CLASS.

206. Cotton: Lectures, recitations, and field practice in identifying and comparing a large number of varieties growing on the experiment station farm; judging individual cotton plants, and lectures on the cultivation, fertilization, and improvement of cotton. The collection of varieties growing on the experiment station farm usually numbers between fifty and one hundred varieties, and all of these are available for students' use. *Two hours lectures, two hours laboratory, first term.*

207. Cotton classing and machinery: This course of laboratory work consists during the first part of the term of practice in classing the commercial grades of cotton by comparing great numbers of samples procured from the offices of cotton buyers with a nearly complete set of type samples owned by this department. A part of this practice will be under the supervision of experienced cotton buyers. During the latter part of the term students are given practice in the handling and sharpening of gins and special work with other machinery used in connection with the cotton crop. *Two hours lectures, two hours laboratory, second term.*

208. Farm management: A course of lectures and practice dealing largely with rotation of crops, cost of producing different crops, systems of farming, selection of a farm, and plans for the best use of the farm or soil in which each student is most interested. This course is intended to give the student an opportunity to bring to bear on practical problems the information acquired from preceding courses of instruction in agriculture and related subjects. *Two hours lectures, two hours laboratory, third term.*

209. Investigation as a basis for a thesis: After a month spent in special reading under the direction of the professor of agriculture with a view to the selection of a subject for a thesis, the student will perform some agricultural experiment in crop production, soil treatment, or in testing farm machinery. Suitable facilities for such thesis work are provided in the fields and agricultural laboratories. In addition to conducting an original experiment the student will review the literature of agriculture to ascertain the results

of similar or related experiments. It is expected that the results of some of these experiments will be worthy of publication. *Entire session.*

210. Farm machinery: Recitations, practice in setting up and operating various kinds of farm machinery, including mowers, grain drills, self binders, etc. *Two hours lectures, two hours laboratory, third term.*

211. Soil physics: Recitations intended to acquaint the student with the physical properties of soils, with the principal soils of Alabama, and especially those of the region from which each student comes. Instruction in this course will be given with a view to fitting a student to engage in the soil survey work of the U. S. Department of Agriculture, as well as to prepare him for the rational management of the soil of the farm. *Two hours lectures, two hours laboratory, first and second terms.*

212. Special crops: A course of lectures dealing with sugar cane, tobacco, rice, broom-corn, and other southern crops not treated in other courses. *Two hours, second term.*

213. Methods of teaching agriculture: This is a course of lectures and laboratory and field exercises intended to meet the needs of those who expect to teach agriculture or nature study in the common schools and agriculture in the high schools. Special attention is given to the selection of material for illustrating the principles of agriculture, and practice will be given in conducting a number of simple demonstrations. Frequent excursions are made to the fields. *Two hours, third term.*

Post graduate courses in crop production, agricultural experimentation and teaching, and farm management are offered. The exact nature of the subject will depend upon the special requirements of the student.

Students taking a four-year course in agriculture receive instruction in the various branches of animal industry and horticulture, as well as in the natural sciences bearing on agriculture.

BOTANY

PROFESSOR LLOYD.

INSTRUCTOR RIDGWAY.

SOPHOMORE CLASS.

301. Elementary Botany: The purpose of this course, planned as it is for sophomores preparing to enter one of several fields of study, is to orientate the student as to the scope of the science, its practical values, and its relation to human knowledge. The course consists of a synthetic treatment of the elements of morphology

and physiology, followed by a brief consideration of examples of the more important plant groups. It is a prerequisite for all other courses in botany. *Lectures and recitations, three hours; laboratory, four hours; third term.*

JUNIOR CLASS.

302. General Agricultural Botany: This course is a development in greater detail, of Course 301. In the laboratory attention is directed chiefly to anatomy and morphology, with stress laid upon matters especially relevant to the interests of students of agriculture. In the lecture room, the time is devoted chiefly to elementary plant physiology. The laboratory work is so arranged that it is constantly correlated with that of the lecture room. The course is particularly adapted to those who are fitting themselves for agriculture and for teaching. *Lectures, two hours; laboratory work, four hours; the entire session.*

Text-book: Bergen and Davis' Principles of Botany.

303. Pharmaceutical Botany. General organography, chiefly though not entirely confined to the higher plants, followed by a study of histology and microtechnic preparatory to a minute study of vegetable drugs in whole and powdered form. Required of students in pharmacy. *Lectures, one hour; laboratory work, four hours; the entire session.*

Text-book: Kraemer's Text-book of Botany and Pharmacognosy.

304. Economic botany: General taxonomy of the plant kingdom, and special taxonomy of the spermatophytes, giving attention especially to the useful and noxious qualities of plants, poisonous, medicinal, and industrial. Especially for students in veterinary medicine; open to students in agriculture. *Two hours, first and second terms.*

Text-book: Bergen's Elementary Botany.

SENIOR CLASS.

Advanced Agricultural Botany. This course is a continuation of course 302, and is designed for students of agriculture, though is open to others prepared to take it. It is divided for convenience into three parts, as follows:

305. Plant pathology. The physiological diseases, as well as those caused by vegetable organisms, are considered; plant hygiene; methods of disease control, and of the selection of resistant strains. *Lectures, two hours; laboratory, four hours, first term.*

Text-book: Duggar's Fungous Diseases of Plants.

306. Plant physiology: *Lectures two hours; laboratory, four hours; second term.*

Barnes, in Coulter, Barnes and Cowles' Text-book of Botany.

307. Phytogenesis: Historical account of the development of our

Interior Pharmaceutical Laboratory

knowledge of the method of evolution, and its modern application to the amelioration of economic races, chiefly of plants. The physiology of reproduction, and the elements of cytology. *Lectures, two hours; laboratory, four hours, third term.*

Text-book: Kellog's Darwinism of Today.

308. Comparative morphology. A comparative study of types of the plant kingdom, and the principles of general classification. Designed especially for those preparing to teach. *Four hours, entire session.*

Text-book: Coulter, in Coulter, Barnes and Cowles' Text-book of Botany.

309. Methods of teaching biology: The history of teaching biology, especially in America, and a study of the prevalent methods of presenting botany (especially) and zoology in the secondary school. The course in botany in the agricultural school. Open to seniors and to others if qualified. Text-books Lloyd and Bigelow's The Teaching of Biology in the Secondary School; Ganong's The Teaching Botanist. *One hour, the entire session.*

310. Graduate courses will be arranged to suit the needs of students who are prepared for them.

Seminar: Students will meet the Professor occasionally in the seminar room for informal discussion and the review of literature.

Thesis: Students who expect to undertake thesis work in this department during their senior year should consult in advance as to the subject so that material may be provided for their work. Students in the general course who wish to take their elective laboratory work in botany should if possible consult about it before the end of their sophomore year.

PHARMACEUTICAL CHEMISTRY, PHARMACY, PHARMACOGNOSY, AND PRESCRIPTION WORK

PROFESSOR MILLER.

ASSISTANT SCOTT.

ASSISTANT COLLIER.

JUNIOR CLASS.

401. (a) Pharmacy: The different systems of weights and measures. Specific gravity. Pharmaceutical problems. The fundamental operations in pharmacy. Apparatus used in pharmaceutical processes. Discussions of all classes of pharmaceutical preparations. *Class work, three hours, entire session.*

(b) Laboratory: Preparation of official and non-official galenicals. *Six hours, entire session.*

402. Pharmacognosy: All official vegetable drugs studied with aid of simple and compound microscope. *Class work with laboratory work, four hours, entire session.*

SENIOR CLASS.

403 (a) Pharmacy: Official and non-official pharmaceutical chemicals, inorganic and organic, including more important newer remedies. *Class work, five hours, entire session.*

(b) Laboratory: Preparation of official and non-official pharmaceuticals, inorganic and organic chemicals. Pharmaceutical testing by pharmacopoeial methods. Drug assaying. Practical exercises in identification of pharmaceutical preparations and chemicals. *Fifteen hours, entire session.*

404. Art of dispensing: The prescription. The study of several hundred original prescriptions from drug-store files. Incompatibilities. Doses. *Four hours, entire session.*

The practical work in pharmacy includes the manufacture of not less than two hundred pharmaceutical preparations and the compounding of not less than fifty prescriptions.

The work in pharmacognosy includes the study of more than 200 drugs, each of which the student is required to recognize by its physical and chemical properties, giving Latin name, common name, origin, habitat, constituents, medicinal action, and dose.

405. The work of the third year in the special course in pharmacy may be elected from the following courses:

(a) An advanced course in the manufacture of galenicals and organic and inorganic chemicals used in medicine.

(b) A course in the testing of drugs and medicinal chemicals for impurities by pharmacopoeial methods.

(c) A course in pharmaceutical assaying, including the assay of alkaloidal drugs, glucosidal drugs, resinous drugs, the valuation of fixed and volatile oils, pepsin, diastase, etc.

(d) A course in water analysis.

(e) A course in milk and butter analysis.

(f) A course in physiological chemistry.

(g) A course in organic preparations.

(h) An advanced course in toxicological analysis.

(i) The presentation of a satisfactory thesis.

Any one who completes the work of the three-year special course in such a manner as to prove himself a competent analyst will be granted the degree of Pharmaceutical Chemist.

The pharmacy department of this institution is a member in good standing of the American Conference of Pharmaceutical Faculties.

TEXT AND REFERENCE BOOKS.

Arny's Principles of Pharmacy, Stevens' Pharmacy and Dispensing, Kraemer's Botany and Pharmacognosy, Caspari's Treatise on

Horticulture

Experiment Station

Pharmacy, Sayre's Organic Materia Medica and Pharmacognosy, Culbreth's Materia Medica and Pharmacognosy, Scoville's The Art of Compounding, Beal's Prescription Practice, Dorland's Pocket Medical Dictionary, Ruddiman's Incompatibilities in Prescriptions, Lyon's Pharmaceutical Assaying, United States Pharmacopoeia, United States Dispensatory, National Dispensatory, National-Standard Dispensatory, King's American Dispensatory, Prescott's Organic Analysis, Allen's Commercial Organic Analysis, Pharmaceutical Journals, Reports of American Pharmaceutical Association.

HORTICULTURE

PROFESSOR WILLIAMS.

INSTRUCTOR PRICE.

Instruction in this department consists of lectures, recitations, and exercises in the greenhouse laboratory, orchards, and gardens of the experiment station. It is the aim to give a thorough course in the practical and scientific phases of the growing of our economic fruit, vegetable, and ornamental plants.

JUNIOR CLASS.

601. Principles of Plant Culture: This includes the details of germination, propagation, environment, transplanting, etc.; also methods of preparing and sowing seed beds. *Recitations, two hours, first term.*

Text-books: Principles of Plant Culture (Goff), The Nursery Book (Bailey).

601 (a) Plant Propagation. Studies including seed testing, propagation of different plants, pruning, etc. Students are required to submit illustrated notes. *Laboratory and field; four hours, first term.*

602. Principles of Fruit Growing: A study of the more important fruits of the United States with especial reference to their cultivation and fertilization. Details of marketing Southern fruits are studied. *Recitations and lectures; two hours, second term.*

Text and reference books: Principles of Fruit growing (Bailey), Popular Fruit Growing (Green), Lessons in Fruit Growing (Goff).

602 (a) Field exercises such as locating orchard sites, and planting, cultivating, pruning and spraying operations are conducted. Illustrated notes are required. *Four hours, second term.*

References: Pruning Book, Horticulturists' Rule Book (Bailey).

603. Vegetable Gardening (Elective): Studies of the principal truck and garden crops with notes as to the origin, classification and economic importance; methods of planting, fertilizing, harvesting, storing and marketing these crops. *Recitations and lectures; two hours, third term.*

Text and Reference Books: Vegetable Gardening (Bailey), Up-to-Date Truck Growing in South (Davis), Vegetable Gardening (Vilmorin), Southern Gardener's Manual (Newman).

603 (a) (Elective with 603) Practicums in the vegetable garden consisting of planting, cultivating and spraying. *Laboratory, two hours, third term.*

SENIOR CLASS.

604. Pomology: Varietal studies of fruits; their origin and classification. Exercises in scoring and describing fruits, pecans, etc., for their respective purposes such as the home market, commercial market and canning. Practicums in canning. *Recitations and lectures, three hours; laboratory, two hours, first term.*

Text and Reference Books: Systematic Pomology (Waugh), Fruit Harvesting, Storing and Marketing (Waugh), The American Fruit Culturist (Thomas).

605. Evolution of Our Native Fruits. *Recitations, two hours, first term.*

Text: Evolution of our Native Fruits (Bailey).

606. Plant Breeding: The study of the improvement of fruits and vegetables. Discussions of the theories and laws relating to plant breeding. Practicums in breeding are given. *Recitations, three hours; laboratory, two hours, second term.*

Texts and Reference: Principles of Plant Breeding (Bailey), Plant Breeding (Davenport).

607. Greenhouse Construction and Management: Plans for heating and constructing greenhouses of modern design are studied with reference to the different crops. *Laboratory, two hours, second term.*

608. Forestry: A study of the forest conditions of Alabama, the care of woodlots and the uses of the different Southern woods. Methods of preservation are also studied. *Recitations and lectures, three hours; laboratory and field exercises, two hours, second term.*

Text and Reference Books: First Book of Forestry (Roth), Practical Aboriculture (Brown), Primer of Forestry (U. S. Department of Agriculture).

609. Landscape Gardening: An introduction to the general subject of landscape design. The trees, shrubs, vines, perennials and annuals are studied which are adapted for Southern gardening. Individual problems are presented for the embellishment of the home and school grounds and plans for public squares and parks are studied. *Lectures, three hours; laboratory, four hours, third term.*

Text: Landscape Gardening (Waugh), References: Modern Civic Design (Robinson), The Landscape Beautiful (Waugh).

ENTOMOLOGY

PROFESSOR HINDS.

INSTRUCTOR TURNER.

In accordance with the catalogue requirements the work in Entomology is taken by all senior students electing an agricultural group of courses. In addition to this senior work the subject is open to postgraduate students, who have completed the senior course satisfactorily, as an elective course leading to the degree of Master of Science. The senior work is given during the fall and spring terms only, while the post-graduate work continues during the college year. In general the instruction is given by lecture courses supplemented by collateral reading as assigned and with appropriate laboratory and field exercises.

The senior courses are designed to familiarize the students who anticipate engaging in agricultural work with the most important general facts of entomology as an educational science and with its importance as a subject having wide economic application. So far as is possible in the brief time available, they are made familiar with some of the most common insect pests, and with general methods of insect control. Particular emphasis is given to the importance of insect species in their effects upon health of domestic animals and of man especially. A foundation is laid during this year for post-graduate study which may fit men to fill some of the many attractive openings in this field which are quite rapidly multiplying in the South.

Excellent accommodations for the department are now provided on the first floor of Comer Hall. The combined lecture and laboratory room provides accommodations for forty or more men. In connection with the range of green-houses there is also a large workroom for experimental and demonstrational work with insecticides and an insectary, 16x40 feet, within which the study of insect problems may be conducted at any time under controllable conditions.

No text-book is required in this subject, but reference publications are at all times available to the student. The lectures may be supplemented by appropriate laboratory work, field exercises, the insect collection, photographs, etc., belonging to the department.

701. Structure and development of insects: The general relation of insects to other animals, showing their origin, distinguishing characteristics and the principal structures upon which they are classified, are here considered. A general study is made of the structure and physiology of insects relating to fundamental principles in their life, habits, and reproduction. The most important

points in the collection, mounting and preservation of insect specimens are also studied.

702. Ecology of insects: Under this heading are considered some of the most important and interesting of entomological subjects, among which are the general relation of insects to the health and welfare of mankind through the transmission of preventable diseases and the production of articles having a large commercial value. Protective devices of insects and their control through exceedingly complicated but important natural factors are among the subjects considered.

703. Important insect pests: As full a study as the limited time permits is made of the pests of greatest economic importance in the household, the orchard, garden, and greenhouse, the enemies of field crops, stored products, etc.

704. Methods in insect control: The principles of insecticide preparation and application are explained and illustrated. This work is supplemented by an exhibit of the principal insecticide materials. Practice in the preparation of the most commonly used materials is given to emphasize proper and desirable methods. The best types of spraying apparatus are shown and tested, and the student is familiarized with many of the special points in practical work. The importance of the improved methods of agricultural practice is shown and the logical basis of their effectiveness is explained.

ANIMAL INDUSTRY

PROFESSOR GRAY.

ASSISTANT EUDALY.

Instruction in this department is given in the class room, in the laboratories, and upon the animal industry farm with the stock. Class room work in dairy instruction is supplemented and strengthened and made practical by requiring each student to work in the dairy laboratory where butter is made, where the Babcock test is used, and where the lactic acid in cream is determined, etc. While lectures are given on how to judge animals, the instruction does not stop with the lectures; the students are taken to the barn and feedlots where animals are placed before them and each student is required to make a written report concerning the animal. The live stock provided for the students' use in studying breeds and judging animals consists of Angus, Jersey, Hereford, and Shorthorn cattle; Duroc-Jersey, Berkshire, and Poland China hogs; Southdown, Dorset, common, and grade sheep.

The department now has the complete herd books of practically all the leading breeds of live stock in America. By the use of these the student is enabled to inform himself in regard to all pedigrees and to study the different scales of points which the breeders have adopted to represent the highest types of the various breeds.

The student is given an opportunity to specialize in animal industry throughout the senior year.

FRESHMAN CLASS.

801. Breeds of live stock: The object is to study the original history of development, and characteristics of each one of the principal breeds of live stock, and to discuss the special adaptability of each breed to Southern conditions. The lecture work is supplemented, as far as possible, by representative animals of the breed under discussion. *Lectures, two hours, latter half third term.*

SOPHOMORE CLASS.

802. Dairying: The study of the secretion, character, and composition of milk. Proper methods of handling milk and cream for consumption; Pasteurizing, sterilizing. The students are given thorough work in using the Babcock test and the lactometer, and the different acid tests, together with the ordinary tests for the purity of milk and its adulteration. They are also drilled in all the phases of butter making. *Lecture and laboratory work; two hours, first term.*

803. Judging live stock: The object of this course is to get the student familiar with the dairy and beef types of animals and to appreciate their difference in function and conformation. Work is also given in judging swine and sheep. Instruction is given largely by the use of the score card. *Laboratory, two hours, second term.*

JUNIOR CLASS.

804. Principles of feeding: The processes and requirements of the animal body are first considered, as the digestion and the utilization of food and conditions affecting them. Then the common feeding stuffs are considered and a study is made of their composition, their comparative value considered chemically and physiologically, and with reference to their fertilizing constituents. Work is given in compounding rations for the various kinds of live stock. *Lectures; two hours, second and third terms.*

805. Herd book study: This includes a study of the various herd books with a view to becoming familiar with the pedigrees of the leading strains and families of the different breeds of live stock. The second one-half of the term is devoted to judging hogs and sheep. *Laboratory; two hours, second term.*

SENIOR CLASS.

806. Principles of breeding: This course embraces the study of the principles of breeding live stock, including the study of variation, its extent and causes; heredity from statistical standpoint; selection; importance of fecundity, and the use, or abuse of in-breeding, cross-breeding, grading-up, with a presentation of the practical application of these principles to the breeder conditions. *Lectures; two hours, first term.*

807. Practical feeding: This course consists of a series of lectures, supplemented by reference reading, upon the most profitable methods of producing, finishing, and marketing swine, beef cattle, and lambs. Feeding dairy cows and marketing the dairy products are also given consideration. *Lectures; two hours, entire session.*

808. Meats: This consists of a study of the structure and composition of meats, quantity, cost, and food value of the various cuts of beef, mutton, and pork; exercises are also given in judging the carcasses of the different classes of animals. A study is made of how to home-dress and home-cure pork. Lectures are given upon the effect of feeding and breeding of the animals as affecting the value of the carcass and the quality of the meat. *Laboratory; two hours, second and third terms.*

809. Judging horses and mules: Here the student is given an opportunity to become familiar with the various classes of horses and mules which are adapted to Alabama conditions and to study the conformation of each class. *Laboratory; two hours, first term.*

810. Live stock farm management: Only those seniors who are especially interested in live stock are expected to take this course. A study is made of methods of operating farms devoted chiefly to live stock production. *Two hours, second term.*

811. Dairying: This course is outlined to meet the requirements of the senior veterinary students. The student is made familiar with the Babcock tests, the use of the lactometer, the determination of lactic acid, churning and separating operations. The tests for the common adulterants are also made. *Two hours, second term.*

FIRST YEAR VETERINARY MEDICINE.

812. Live stock management: This course is outlined to meet the requirements of the veterinary students. It consists of a series of lectures on the care, housing, and management of horses, cattle, sheep, and swine. *Lectures; two hours, first term.*

813. Judging live stock: For the first year veterinary students. It consists in judging stock, special reference being given to horses and mules and dairy cattle. The object is to get the student familiar with the normal animal body in order that the abnormal or diseased

conditions may be readily recognized. *Laboratory; two hours, third term.*

814. Feeding live stock: This course is offered for the benefit of the first year veterinary and special agricultural students. The food requirements of the animal body are first briefly considered. All through the course the practical, rather than the scientific, side of feeding is emphasized. Special reference is made to feeding horses and dairy cattle. *Second term.*

Ample opportunity and encouragement is extended to those students who wish to do post-graduate work in animal industry. With the completion of the new building there have been opened up fully equipped laboratories for work in this department. Applicants for graduate work will be assigned special research work in some line of animal industry and will be aided in their line of investigation.

THE DEPARTMENT OF SCHOOL AGRICULTURE OR AGRICULTURAL EXTENSION WORK

PROFESSOR DUNCAN.

The department of School Agriculture or Agricultural Extension Work was created in June, 1909, by the Alabama Polytechnic Institute in co-operation with the United States Department of Agriculture, Washington, D. C.

There are three phases or lines of work for the agricultural colleges:

1. The experimental or research work which is conducted on the station farm and in the various laboratories.
2. Class room and laboratory teaching for students who come to college.
3. Outside teaching or extension work.

The National Country Life Commission appointed by the President in 1908 for the purpose of taking stock of country life conditions, in order that the President might make intelligent suggestions to Congress for legislation to improve these conditions, has, as one of its three final recommendations, the following to say about extension work:

"Each state college of agriculture should be empowered to organize as soon as practicable a complete department of college extension, so managed as to reach every person on the land in its State, with both information and inspiration."

Extension teaching includes work along the following lines:

1. Personal acquaintanceship in such a way as to arouse interest in farming.

2. Giving information by personal correspondence and circular letters.
3. The publication of leaflets and pamphlets along agricultural and other educational lines.
4. Co-operating with and assisting various organizations and societies having for their object the improvement of agricultural conditions.
5. Assisting and co-operating with schools, aiding them in teaching agriculture, in improving school grounds and in making school gardens.
6. Arranging and directing reading courses for farmers and farmers' wives.
7. Conducting demonstrations on the farms connected with schools.
8. Running educational trains.
9. Assisting in farmers' short courses and farmers' institutes.
10. Organizing boys' and girls' Farm-Life Clubs.
11. Conducting correspondence courses for farmers.

COLLEGE OF VETERINARY MEDICINE AND SURGERY

DEPARTMENTS.

The College of Veterinary Medicine and Surgery comprises the following departments:

Veterinary Medicine.
Physiology.
Surgery.

In addition, students in the College of Veterinary Medicine and Surgery receive instruction in other departments as follows:

English.
Chemistry.
Pharmacy.
Toxicology and Physiological Chemistry,
Animal Industry.
Botany.

By direction of the United States Civil Service Commission, the College has been added to the list of accredited veterinary colleges.

VETERINARY MEDICINE AND SURGERY

PROFESSOR CARY.

INSTRUCTOR McADORY.

INSTRUCTOR HALLMAN.

INSTRUCTOR HOWELL.

INSTRUCTOR WHITESELL.

LECTURER BAHNSEN.

PHYSIOLOGY AND VETERINARY SCIENCE.

101. Physiology: The students in the regular and special agricultural courses, in all of the pharmacy courses, in the course in chemistry and metallurgy, and in the three-year course in veterinary medicine and surgery, all study elementary physiology. The aim of the course is to teach anatomy, histology, hygiene, and sanitation. The instruction is given by lectures, demonstrations, and text-book. Text-book, Huxley's Physiology. *Two hours, entire session.*

102. Veterinary science (Elective): For students in agriculture. Lectures and chemical work in the junior year. In the senior year, the students may elect, with the consent of the professor in charge, six hours in the regular three-year veterinary course. The aim of the instruction given to the agricultural students is to teach such lessons as will enable them to prevent many diseases on the farm by correct hygiene and sanitation. At the same time, they will be instructed in the ways and means of treating and handling the common diseases of farm animals. This work will prepare them for "first aid" treatment and emergencies as well as for the course in veterinary medicine and surgery. *Five hours, junior year; six hours, senior year.*

VETERINARY MEDICINE AND SURGERY.

The three-year course in veterinary medicine and surgery leads to the degree of Doctor of Veterinary Medicine. It is the outgrowth of fifteen years' work of the department of physiology and veterinary science. Moreover, it has been established to meet the demand of the young men of the South who desire to become educated veterinarians, and for students who desire to prepare for the study of human medicine.

EQUIPMENT.

The main veterinary building has an independent gas plant and a connected sewer system. It is supplied with electric lights and

Veterinary Laboratory

water. The building contains an office, two lecture rooms, a physiological laboratory, and a museum on the first floor; on the second floor, are located two research laboratory rooms, a library and reading room, a large lecture room containing an incubator room, and all the necessary apparatus for pathological, histological, and bacteriological work.

A separate building is used as a house for small animals (rabbits, guinea pigs, pigeons, etc.) that are employed for experimental and demonstration work in bacteriology, histology, and physiology.

The anatomy division has a separate one-story brick building with good ventilation and extensive sky light. It is supplied with gas, water, and electric lights. The anatomy museum contains the skeletons of man, the horse, the ox, the sheep, and the pig, and models of the limbs and special organs of man and the horse. It is also supplied with different lots of bones of the horse and with dissected and dried limbs showing the relation and attachment of muscles. An hexagonal operating pavilion thirty-six feet in diameter has just been completed. It is supplied with water and electric lights and lockers for students.

The veterinary hospital contains five box stalls, four open single stalls, an office, and a feed room, on the first floor; a large room for storing hay, fodder, and feed, is found on the upper floor. The veterinary department has for its exclusive use about six acres of land divided into lots, pens and paddocks. In one of the lots, are located two large sheds having a capacity for accommodating one hundred and twenty-five cattle or large animals. These sheds are used for tick fever inoculation purposes and for isolation of animals affected with infectious diseases.

The three-year veterinary course students take five terms of work in the department of animal industry and dairying, one year's work in pharmacy; four terms of work in the chemical department, two terms' work in botany and one year's work in English. The facilities and equipment of these departments are excellent.

The veterinary course is especially strong in practical laboratory work.

1. In anatomy the work of dissection is continued through the first and second years and the first term of the third year. It is a well established fact that useful surgical or real anatomy can not be acquired without careful and thorough work in the dissecting room. Special stress is given to comparative anatomy of the horse, ox, sheep, pig, and dog.

2. Clinical laboratory work is also required throughout the course. The clinical work comes six days in the week and the cases presented embrace mules, horses, cattle, sheep, dogs, poultry, and hogs.

The variety is such as to illustrate a large number of diseases, surgical operations, and therapeutic applications.

3. The physiological laboratory is supplied with apparatus for tests and experiments in physiology.

4. The laboratory for pathology, histology, and bacteriology is extensive, and is fully fitted with the latest apparatus. This laboratory has been the outgrowth of eighteen years of cumulative additions. The aim is to teach students to work in the laboratory rather than to memorize the printed pages of the text-books.

5. In chemistry and toxicology the students work in one of the best of chemical laboratories.

6. In pharmacy, the students work in practical pharmacy for five hours a week for a year. In this they learn to recognize, compound, and dispense drugs.

7. The animal husbandry department affords ample facilities for practice in feeding and judging cattle, sheep, hogs, and mules.

8. The dairy department gives practical laboratory work in dairy operations and in handling and feeding dairy cattle.

9. The botanical department is well equipped and gives excellent opportunity for laboratory work.

10. The subjects in the course of study are such as are required in the leading veterinary colleges of America. The course meets the requirements of the American Veterinary Medical Association and the Bureau of Animal Industry and United States Civil Service Commission. It is the aim to have the teaching staff meet the requirements of the best standards. The length of the course is three years of nine months each.

FIRST YEAR.

103. Human physiology: Elementary human physiology. The instruction is given by lectures, demonstrations, and text-books. *Two hours, entire session.*

104. Histology: Deals with the minute anatomy of the various tissues. It includes methods of fixing, imbedding, sectioning, mounting, staining, and a microscopical study of the tissues. Histology is studied by lectures and by laboratory work. *Five hours, first and second terms.*

105. Embryology: This is a study of the development of the embryo and is designed to prepare the student for the study and practice of obstetrics. *Five hours, third term.*

SECOND YEAR.

106. Veterinary physiology, recitations: Treats of the actions or functions of the various vital organs of the animal body. Attention is also given to the laws of health and the conditions most

favorable to the healthy action of the animal body. *Two hours, first and second terms.*

107. Physiology laboratory: A part of the course deals with chemical physiology and the vital processes of the organs of the domestic animals. *Two hours, third term.*

108. Bacteriology: The principles of bacteriology and chief pathogenic organisms are carefully studied. *Three hours in class room and three hours in laboratory, first term and first half of the second term.*

109. Pathology: This deals with the general pathological anatomy and histology as observed in man and the different species of animals, and a study of the cellular changes in diseased tissues and organs. *Three hours recitations and three hours in laboratory, last half of the second term and entire third term.*

110. Obstetrics: Practical work is given as cases are presented. *Two hours, first and second terms.*

111. Special surgery: This includes surgery of the head, eye, neck, chest, limbs, skin, abnormal organs, urino-genital system and castration. It consists of lectures supplemented by practical operations. *Two hours, second and third terms.*

Botany: A study of medicinal and poisonous plants. *Two hours, first and second terms.*

THIRD YEAR.

112. Surgical exercises: In these exercises the student is required to perform the principal surgical operations. *Two hours, second term.*

113. Infectious diseases: This is a study of the diagnosis and preventive sanitation of the animal plagues. *Two hours first term, three hours second term.*

114. Parasites: This subject deals with the parasitic infestations of man and animal. An abundance of material is available. *Two hours, second and third terms.*

115. Meat inspection: Embraces recitations, lectures, and abattoir inspections in the smaller and larger cities of the State. *Two hours, first and second terms.*

116. Milk inspection: The course includes the study of milk adulterants, sanitary construction of dairy barns and dairy houses, conditions of cows and the diseases of dairy cattle; the feed, the water supply, the dairy cans, bottles and wagons, the disease and filth germs of milk. *Three hours, third term.*

117. Urinalysis: This course is largely laboratory work. *Three hours, third term.*

118. Toxicology: Is a study of the chemical, physical, physiologi-

cal actions of poisons. The laboratory course embraces the official tests for poisons. *Seven hours, third term.*

Thesis: Development and preparation of an original theme on some subject relating to veterinary medicine and surgery, or veterinary sanitation and hygiene is required. *Four hours, entire year.*

FIRST, SECOND, AND THIRD YEARS.

119. Comparative anatomy: Based upon the descriptive anatomy of the horse. It includes lectures and dissection. The course in anatomy is continued in the dissecting room throughout the first and second years, and the first term of the third year. The work will be taken up in the following order:

(a) Osteology: Requires a thorough knowledge of the bones of the horse and the comparative variations as found in the ox, pig, dog, and sheep.

(b) Arthrology: The course consists in a study of the joints or articulations and the synovial sacs.

(c) Myology: Includes a study of the muscles with their tendons and synovial sheaths or bursae.

(d) Splanchnology: Treats of the internal organs found in the thorax and abdomen. Special attention will be given to these subjects in the horse, ox, sheep, pig, dog, and cat. It is designed both for the practitioner and meat inspector.

(e) Angiology: It treats of the blood vessels and heart and lymph vessels and glands. This is designed to meet the requirements of the practitioner and meat inspector; hence, the students must locate the lymph glands in the horse, ox, sheep, pig, and dog.

(f) Neurology: Calls forth a study of the cerebro-spinal, and sympathetic nervous systems.

(g) Special anatomy: Comprises the study of the organs of special sense, urino-genital organs, the foot, and the larynx.

120. Materia medica and therapeutics: A study of the principal drugs used in veterinary medicine, their doses, physiological actions, therapeutic uses, and prescription writing. *Third term of second year; and first and second terms of third year.*

121. General surgery: This course embraces the general principles of surgery. *Two hours, third term of second year; and first term of third year.*

122. Clinical laboratory: Free clinics. Students are required to study each. A great variety of cases are always presented. *One to two hours each day, second and third years, and three hours on Saturday for all classes.*

123. Veterinary medicine: This deals with the principles and practice of veterinary medicine. *Three hours, second and third years.*

124. Physiology and hygiene—Teachers' course: The department can give the following line of instruction to prospective Alabama teachers:

1. Structure of human body and animals.
    - (a). Study of cells, tissues, and organs.
    - (b). How to use the smaller animals in teaching naked eye anatomy.
2. Physiological actions of the different parts and products of the animal and the human body. This embodies:
    - (a). Functional tests.
    - (b). Chemico-physiological tests.
    - (c). Physico-physiological tests.
3. Hygiene, embracing instruction in personal health problems.
4. Sanitation, including health conditions of cities, homes, public buildings, farms, barns, dairies, etc.
5. Care of animals on the farm and in the city.

TEXT AND REFERENCE BOOKS.

General Chemistry—Remsen's College Chemistry.

Physiology Recitations—Hough and Sedgewick, and Lectures.

Physiology Laboratory—Fish's Elementary Exercises in Physiology; Smith's Manual of Veterinary Physiology.

English—To be announced in September.

Anatomy—Chauveau's and Sisson's Comparative Anatomy.

Clinical Laboratory—Blank Books or Note Books.

Histology—Piersol, Bohm, Davidaff and Huber, Bailey ,and Lectures.

Embryology—Hertwig-Mark; Minot. Lectures.

Livestock Management—Lectures and text-books to be announced later.

Feeding Livestock—Smith; Henry; Jordan.

Animal Husbandry—Craig, and Lectures.

Botany—Lectures; Pammel's Poisonous Plants.

Pharmacy—Lectures; and Stevens.

Bacteriology—Lectures; Moore's Lab. Guide, and Jordan's Bacteriology.

Pathology—Ziegler; Kitt; Adami; Kinsley.

Obstetrics—Williams; DeBruin; Fleming; Dalrymple.

General Surgery—Lectures and Frohner; Moeller.

Special Surgery—Lectures; Moeller; Merillat; Frohner.

Surgical Exercises—W. L. Williams.

Materia Medica and Therapeutics—Wilcox; Winslow; Fish; Quitman.

Veterinary Medicine—Law. Vols. 1, 2, and 3, Moussu; Friedberger and Frohner.

Infectious Diseases—Moore—Law—Vol. 4.
Parasites—Neuman—Law. Vol. 5; Stiles; Kaupp.
Milk and Meat Inspection—Van Slyke; Conn; Ostertag; Peters; Edlemann-Eichhorn.
Toxicology—Tanner; Fish.
Urine Analysis—Fish.
Restraint of Animals—White.

ORGANIZATIONS

CADET BAND.

A. L. THOMAS, Bandmaster.

Three musical organizations are now maintained—the band, the orchestra, and the glee club. Membership in these organizations is open to any student who has musical talent.

The band is maintained by the college for students who desire to develop their musical ability and for those who wish to learn music. It furnishes music for all college exercises and takes part in military manoeuvres. Regular and individual instruction is given free of charge during the first term, embodying the rudiments of music and general musical information in conjunction with the practical instruction on the instrument. Public concerts are given weekly during the second term, and engagements elsewhere are usually arranged.

A gold medal is given each year by the bandmaster to the member who makes the best record.

The orchestra is an organization for musical recreation, and members are carefully selected by the director, according to their musical ability.

The glee club, comprising the quartet, chorus, and stringed instruments, is a student organization.

The services of a musician are secured to assist with the instruction and training of the quartet and chorus. Two concerts are given at the college and a concert tour is usually arranged during the third term.

YOUNG MEN'S CHRISTIAN ASSOCIATION.

E. S. KING, General Secretary.

This association is regularly organized and a suite of well furnished rooms on the second floor of the library has been set apart for its exclusive use. Through its weekly meetings it exerts a wholesome Christian influence among the students.

Students are advised to unite with the association when they enter the college.

The ladies of the different churches in Auburn are organized into an auxiliary association to the Y. M. C. A. of the college.

The following are the officers of the association:

Frank Ordway	President

S. R. Cruse	Vice-President
H. C. Hanlin	Treasurer
C. W. Crumly	Secretary

LITERARY SOCIETIES.

There are two literary societies connected with the Institute—the Wirt and the Websterian. Each has a hall in the main building.

These societies hold celebrations on the evenings of Thanksgiving day and 22nd of February. A gentleman, selected by the faculty, is invited to deliver an address before the literary societies at Commencement.

To encourage the literary societies the trustees have directed that a medal be awarded on Commencement Day to the member of each society who is both efficient and regular in attendance, and who is the best debater. The method of selection is determined by the faculty.

SOCIETY OF THE ALUMNI.

The annual alumni oration is delivered by a member of the society in Langdon Hall on Alumni Day, Tuesday of Commencement week.

OFFICERS OF THE ALUMNI ASSOCIATION.

L. W. Payne, '92, Austin, Tex.	Orator
C. L. Harold, '00, Montgomery, Ala.	President
R. D. Webb, '97, Auburn, Ala.	Secretary and Treasurer

Vice-Presidents.

B. B. Ross, '81	Auburn, Ala.
R. ap C. Jones, '87	Selma, Ala.
J. V. Denson, '05	Opelika, Ala.
W. M. Williams, '96	Montgomery, Ala.
F. L. Tate, '97	Wetumpka, Ala.
D. J. Parker, '01	Carbon Hill, Ala.
Thomas Bragg, '01	Auburn, Ala.
R. C. Smith, '91	Opelika, Ala.
T. H. Frazer, '78	Mobile, Ala.
W. K. Terry, '89	Birmingham, Ala.
C. S. Andrews, '94	Chattanooga, Tenn.
H. B. Park, '02	LaGrange, Ga.
L. W. Wharton, '01	Gadsden, Ala.
C. W. Ashcraft, '88	Florence, Ala.
H. Y. Hall, '00	San Francisco, Cal.
J. E. D. Yonge, '02	Pensacola, Fla.
C. N. Ousley, '81	Ft. Worth, Tex.

ENGINEERING SOCIETY.

All students in the courses of engineering and architecture are eligible for membership in the Engineering Society. Meetings are held twice a month, and the chief purpose of the society is to promote personal fellowship among the members, and closer affiliation with practical engineers. Prominent engineers in all lines are invited to address the society from time to time upon subjects connected with their work. At other meetings the program is supplied by the student members, thus giving opportunity for the students in one department to become somewhat familiar with the problems met with in other lines of engineering.

For the present, the meetings are held in Langdon Hall, but it is expected to provide suitable quarters for the society in the new Broun Engineering Hall, which has been erected. No regular dues are required of the members, but an occasional assessment is made to cover necessary expenses.

OFFICERS.

A. S. Noble	President
H. C. McGregor	Senior Vice-President
W. Anderson	Junior Vice-President
J. W. Bivins	Secretary
C. R. Hixon	Treasurer

AGRICULTURAL CLUB.

The Agricultural Club was organized in 1907. All students interested in agriculture and the agricultural sciences are eligible for membership. The members of the Agricultural Faculty take an active part in the work of the club. Meetings are held once a week, and an effort is made to promote interest in all lines of agriculture, to develop a spirit of good fellowship among the students of the course, and to bring them in contact with prominent workers of the science as opportunity offers to present them on the regular program.

Meetings are held in the auditorium of Comer Agricultural Hall.

OFFICERS.

E. W. Lumpkin	President
F. L. Jenkins	Vice-President
H. C. Buchan	Secretary
W. F. Hodges	Treasurer
H. I. Brengle	Librarian

GYMNASIUM AND ATHLETIC FIELD.

The gymnasium is situated at the west end of the athletic and drill grounds, and contains one room, 80x40 feet, with strong beams above for fastening the usual fixtures.

It is equipped with Spalding's gymnasium apparatus and is open to all students at stated hours, under the care of an officer.

The athletic field has a quarter-mile cinder track and ample space for football, baseball, and general athletics.

DRAKE ATHLETIC FIELD.

A new athletic field, named in honor of the Surgeon, Dr. J. H. Drake, has been provided for baseball, football, and track athletics. It is situated on the experiment station grounds near the gymnasium. It will be gradually beautified and equipped with necessary buildings and accommodations.

DISCIPLINE REGULATIONS.

The government of the college is administered by the president and faculty in accordance with the code of laws and regulations enacted by the trustees.

Each student upon entering is required to sign his name in the matriculation book and pledge himself to obey the rules and regulations of the college.

All students are required to wear the prescribed uniform.

Attention to study and punctuality in attendance on recitations and all other duties are required of every student. Students are prohibited from having in their possession arms or weapons not issued for the performance of military duty, and also from using or causing to be brought into the college limits, intoxicating liquors.

Students are not permitted to participate in any public entertainment, or game, without previously obtaining the consent of the faculty.

No student will be permitted without the approval of his parent or guardian, to take part in a public game of football.

No student who has failed in two or more subjects will be permitted to be absent from college for athletic contests or other purposes.

(a) Every absence from recitation or examination is graded zero.

(b) When the grade of a student is lowered by reason of absence for which satisfactory excuse can be rendered, a special re-examination may be subsequently granted, and the grade made on the special re-examination alone is substituted for that previously received.

(c) Only sickness, as reported by the surgeon, or absence by reason of family sickness, or official or collegiate business, will constitute a satisfactory excuse for granting a re-examination.

O. D. Smith Hall

When a student is called away from college by his parents for reasons other than those specified above, his zeroes for absence are not removed.

The term grade of a student is the average of his daily sessional and term examination marks, found by giving due weight to the term examination.

Only privates of the senior class in full standing who are candidates for graduation may be excused by the president from all military drills, and also students over twenty-one years of age at *the time of entering college* that are permitted to devote their time to one special study, as chemistry, agriculture, pharmacy, or engineering, provided the time devoted to drill is spent by them in laboratory work.

No student can remain an officer who receives during the session more than one hundred demerits.

BOARDING.

The students board almost entirely with families of the town of Auburn, and thus enjoy all the protecting and beneficial influences of the family circle.

For each house an inspector is appointed, whose duty it is to report those who are guilty of any violation of order. The report of the inspector is made to the commandant at stated intervals.

Students, after selecting their boarding houses, are not permitted to make changes without obtaining permission from the president, and this permission is given only at the close of a term, except for special reasons approved by the parent.

MILITARY DRILL.

There are three regular military drills each week, and all undergraduate students, not physically incapacitated to bear arms, are required to engage in these exercises; privates of the senior class are exempt.

The drills are short and the duty involves no hardships. The military drill is a health-giving exercise, and its good effects in the development of the *physique* and improvement of the carriage of the cadet are manifest.

RELIGIOUS SERVICES.

Religious services are held every morning in the chapel.

All students, unless excused on the written request of parents for religious scruples, are required to attend these exercises, and also to attend the church of their choice on Sunday morning.

Opportunities are also offered for attending Bible classes every Sunday.

DISTINCTIONS.

Distinctions are awarded in the different subjects of each class to those students whose grade for the entire year is above ninety per cent.

Certificates of distinction are rewarded in public on Commencement day to those who obtain an average of ninety per cent. in all the prescribed studies of a regular class; and also to those who obtain three distinctions in the freshman class, four in the sophomore class, five in the junior class, and six in the senior class; provided they have satisfactorily passed all the regular examinations of that session, and have not received forty demerits during the year.

A distinction is not given in the senior class if the average grade in any one subject is less than 75 per cent.

HONORS.

Members of the senior class who attain distinction at the final examinations with an average grade, in the subjects required, of 95 per cent. are published as *Graduates with Highest Honor.*

Those who attain distinction with an average grade of 90 per cent. and less than 95 per cent. are published as *Graduates with Honor.*

Those who attain less than 90 per cent. and more than 60 per cent. are published as *Graduates.*

Students of the classes lower than the senior who attain distinction with an average grade in the required subjects of 95 per cent. are published in alphabetical order as having attained *Highest Distinction.*

RECORDS AND REPORTS.

Daily records of the various exercises of the classes are kept by the officers of instruction.

At the close of each term and at regular intervals reports giving the grade made by each student are sent to the parent or guardian.

EXAMINATIONS.

Written examinations on the studies of the half-term are held by each professor during the months of October, February, and April. Each examination occupies one hour.

At the end of each term written examinations, or written and oral, are held on the studies passed over during that term.

Special examinations are held only by order of the faculty, and in no case will private examinations be permitted.

Students falling below the minimum grade at the final examinations can be promoted to full standing in the next higher class only on satisfactory examinations at the opening of the next session.

It is required that every student who enters the college shall remain through the examinations at the end of the term. Leaves of absence and honorable discharges will, therefore, not be granted within three weeks of the examination, except for providential reasons.

SCHOLARSHIPS—PRIZES.

The following scholarships and prizes have been established:

The William LeRoy Broun Memorial Scholarship of $170, established by the Alumni Society in memory of the late distinguished president of the Institute.

The Ligon Scholarship of $170, established by Col. R. F. Ligon, Montgomery, Ala.

The Thomas Scholarship of $170, established by Judge William H. Thomas, Montgomery, Ala.

The Ball Scholarship of $170, established by Mr. Fred S. Ball, Montgomery, Ala.

The Dunklin Scholarship of $600, established by Mr. and Mrs. J. C. Street, Opelika, Ala., in memory of Prof. J. T. Dunklin, formerly professor of Latin in the college.

The 1908 Scholarship of $150, established by the Class of 1908.

The Alice Carr Scholarship of $180, established for young women by the late Miss Alice Carr, Auburn, Ala.

The Ransom Memorial Scholarship of $125 per year, established by the Alumni Association in memory of the late Prof. A. McB. Ransom, is available for students in the junior and senior classes of the course in Chemistry and Metallurgy.

The Jewish Loan Scholarship of $1,000, established by a former student of the college.

A scholarship has been established for worthy musicians who are in need of assistance in defraying their college expenses.

The scholarships enumerated above are loan scholarships, granted to worthy young men and women, to be returned after graduation.

The Robert E. Lee Memorial Scholarship of $100, an annual donation for the son of a Confederate veteran, established by the Children of the Confederacy of Alabama under the auspices of Mrs. Mary G. Pickens.

The above named scholarships and ten other scholarships are administered by the Alumni Society. (*For information address R. D. Webb, Secretary.*)

The Architects' Prize, medal to that member of the senior class in the department of architecture who is most proficient in design. Established in 1911 by the Society of Architects in Alabama.

THE ORATORICAL PRIZE, medal to that member of the junior class who composed and delivered the best oration on junior class day of Commencement.

1910, *William Francis Murphy*, Henry County.

THE ORATORICAL PRIZE, for the Annual Inter-Literary Society contest, February 22.

1911, *John Lemley Liles*, Marshall County.

SOPHOMORE MEDAL IN DECLAMATION for Annual contest, May 1st.

1910, *Samuel Ridgely Cruse*, Madison County.

PRIZE FOR BEST DEBATER, a medal given annually by the Board of Trustees to the best debater in the Wirt and Websterian Literary societies each.

1910, Websterian Society, *Julius Sylvester Blackburn*, Lee County; Wirt Society, *Samuel Ridgely Cruse*, Madison County.

MUSIC MEDAL.

1910, *Forrest Revell Harsh*, Jefferson County.

BATTALION MEDAL, for the best drilled soldier.

1910, *Luther Dillard Fuller*, Montgomery County.

PRIZE FOR BEST DRILLED COMPANY, a sword given by Board of Trustees.

1910, *John Morris Spearman*, Walker County.

LIBRARY.

Librarian, JAMES R. RUTLAND.

Assistant Librarian, MISS LUCILE VIRDEN.

A beautiful Carnegie library building of stone and pressed brick has been erected. The reading room is 80x40 feet, and the building is equipped with every convenience. It is lighted by electricity and heated by steam. The capacity of the stack room is sixty thousand volumes. The library now contains 23,974 bound volumes, including valuable reference and scientific books, with select editions of standard authors, and others suitable for students, carefully and recently selected. It is kept open eight hours daily for the use of students as a reading room and is thus made an important educational feature.

THE O. D. SMITH COLLECTION.

The library of the late Prof. O. D. Smith has been presented to the college by Mrs. O. D. Smith, and is preserved as a memorial to his long and distinguished services to the college.

THE F. D. PEABODY MEMORIAL ROOM.

Through the generosity of Mr. George Foster Peabody, New York City, an annual fund of fifty dollars, income from a permanent investment, is available for the purchase of books and furniture for the "F. D. Peabody Memorial Historical Seminary." F. D. Peabody, Esq., was a distinguished graduate of the Class of 1876.

MUSEUM.

The museum occupies a large room in the third story of the Main Building. It is provided with suitable cases and is equipped with valuable specimens and models of an instructive character.

EXPENSES.

There is no charge for tuition for a resident of Alabama.

Incidental fee, per session	$ 5.00
Surgeon's fee, per session	5.00
Library fee, per session	2.00
Laundry fee, per session	12.50
	$24.50

These fees are payable on matriculation. *By order of the trustees no fees can be remitted.*

Board, including lodging, fuel, and lights, is furnished at $13.00 to $16.50 per month.

For the non-resident of the state there is a charge of tuition of $20.00 per session, payable on matriculation, in addition to the annual fees payable by all students.

The necessary expenses for a session, not including uniforms or books, are, for a resident of Alabama, as follows:

College fees	$ 12.00	$ 12.00
Laundry fee	12.50	12.50
Board, lodging, fuel, and lights	117.00	148.50
Total	$141.50	$173.00

By special arrangement with the college authorities, Mrs. M. L. Mitchell and Mr. B. T. Blasingame will accommodate students with board, lodging, fuel, etc., for $12.50 per month.

This estimate does not include the cost of the uniform, $15.00, nor of books, say from $5.00 to $15.00, or the laboratory fees in the higher classes, $5.00.

LABORATORY FEES.

For each student in the junior or senior laboratory in pharmacy, chemistry, electrical, or mechanical engineering, a fee of $5.00 per session is required for each department. This fee is payable *on admission to the laboratory,* and is not remitted. In the department of veterinary medicine, a dissecting fee of $10.00 is charged.

Special students in laboratory work will pay additional fees for each separate division of work, and will be charged with all material consumed in experiments.

NON-RESIDENT STUDENTS.

Tuition for students, not residents of Alabama, is $20.00 per session, unless remitted by the trustees to worthy students upon the recommendation of the faculty.

The remission of this tuition fee to non-resident students will be granted in the form of a free scholarship for the succeeding year to those who obtain a distinction the preceding year, or who, by reason of merit, are deemed worthy.

This tuition for non-residents is remitted to sons of ministers of the gospel.

HONOR SCHOLARSHIPS.

The following non-resident students were granted, each by reason of special merit in conduct and scholarship during the session of 1909-'10, an honor scholarship, which exempted from tuition fees:

Walker Anderson	Florida
Clarence Pax Andrew	Georgia
Henry Irwin Brengle	Florida
Charles Dean Chitty	Georgia
Nolan Lewis Dudley, Jr.	Georgia
Claude Everett Edmiston	Florida
Thurston DuPuis Futch	Florida
William Davis Hall	Georgia
Frampton King	Florida
Henry Augustus Lee	Georgia
Roy Miller Lilly	Georgia
Grafton Lothrop	Texas
Charles Edward Sauls	Georgia

UNIFORMS.

A uniform of cadet gray cloth is prescribed, which all undergraduate students are required to wear during the session. The uniforms are made by a contratcor, and are of excellent cloth manufactured at the Charlottesville mill. A suit, including cap, costs at present $15.00. It is neat and serviceable, and less expensive than ordinary clothing.

CONTINGENT FEE.

A contingent fee of $2.50 is required to be deposited by each student on matriculation to cover any special or general damage to college property for which he may be liable. General damages are assessed on the body of students.

At the close of the session of the whole of the contingent free, or the unexpended balance, is refunded to the student.

AMOUNT OF DEPOSIT.

Fees to be paid on entrance:

Incidental	$ 5.00	
Library	2.00	
Surgeon	5.00	
Contingent	2.50	
Athletic	3.00	
Uniform	15.00	
Laundry fee for session	12.50	
For a resident of Alabama	$45.00—	$45.00
Tuition non-resident		20.00
For a non-resident		$65.00

Besides the above, the student should deposit with the treasurer enough to pay for books, one month's board, incidentals, amounting to say $27.50. Hence, a resident of Alabama should deposit with the treasurer $70.00; a non-resident, $90.00. For a student entering after January 1st, the deposit for laundry fee is seven dollars ($7.00).

FUNDS OF STUDENTS.

Parents and guardians are advised to deposit with the treasurer of the college all funds desired for sons or wards, whether for regular charges or college fees or board, or for any other purpose. It is the duty of this officer to keep safely all funds placed in his hands, and to pay all expenses incurred by the students, including board, uniform, books, etc.

The college can not be held respoosible for the expenses of a student unless the funds are deposited under specific instructions from the parent or guardian to the treasurer. No student should be permitted to have a large amount of pocket money, as it brings only trouble and encourages idleness.

THESIS.

Each applicant for a degree is required to write and submit to the faculty a thesis, or oration, and read or deliver the same at Commencement, if required by the faculty.

There may be presented, with the approval of the professor in charge, a carefully written report of special work done in a laboratory. showing independent investigation and discussion of some subject.

It must be given to the Professor of English by the first of May. The subject must be submitted for approval by January 1st.

SURGEON.

The surgeon is required to be present at the college daily, to visit at their quarters the cadets that are reported sick, and give all requisite medical attention without other charge than the regular surgeon's fee, paid on entering the Institute.

An infirmary has been established, and will be properly equipped.

LOCATION.

The Institute is situated in the town of Auburn, fifty-nine miles east of Montgomery, on the line of the Western Railroad.

The region is high and healthful, noted for its general good health and freedom from malaria, having an elevation of eight hundred and twenty-six feet above tide-water. By statute of the State the sale of spirituous liquors and the keeping of saloons of any kind are forbidden.

ACADEMIC YEAR.

The academic year for 1911-1912 commences on Wednesday, September 6, 1911, and ends on Wednesday, June 5, 1912, which is Commencement Day.

It is divided into three terms: The first term extends from the opening of the session to Wednesday, December 20th; the second term begins Wednesday, January 3d, and ends March 23d; the third term continues to the close of the session.

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